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AND

DISEASES OF WOMEN AND CHILDREN.

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THE AMERICAN
JOURNAL OF OBSTETRICS
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DISEASES OF WOMEN AND CHILDREN.

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ORIGINAL COMMUNICATIONS.

OBLITERATION OF THE CERVIX UTERI DURING PREGNANCY.

BY SAMUEL C. BUSEY, M.D., Washington, D. C.,
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IN an essay published in Vol. IV., page 1, of this journal, entitled "Dr. King's Theory of the Determining Cause of Labor at Full Term," at page 10 I made the following assertion: "Stoltz, Duncan, Dubois, and Cazeaux, maintain that the silent and painless contractions occurring during the latter days of the ninth month of pregnancy are occasioned by the process of cervical obliteration taking place from above downwards." In the succeeding number (page 213, Vol. IV.) Professor King replied in the following language: "From the statement, attributed by Dr. Busey to

Stoltz, Duncan, Dubois, and Cazeaux, that 'the painless contractions occurring during the ninth month of pregnancy are occasioned by the process of cervical obliteration taking place,' and are therefore coincident rather with augmentation than lessening of the uterine cavity, I am compelled, with all due respect for such distinguished authority, to demur. Obliteration of the neck occupies eight or ten weeks at least; it generally begins during the sixth month of pregnancy (and hence the not uncommon occurrence of 'unavoidable' haemorrhage at this period), and is nearly or quite complete before the insensible contractions of the uterus take place."

The intimation thrown out, that I had "attributed" to Stoltz, Duncan, Dubois, and Cazeaux views which they did not entertain, was too plain to escape observation. Feeling assured, however, that the readers of this journal were as well posted in the literature of the subject as I could be, I was content to leave the issue with them, and the more especially so as I had at the time under observation cases which would afford me the opportunity of testing the accuracy of these views.

One of these cases was a primipara, who had suffered from retroversion of the uterus previous to marriage, and at the time of marriage wore a closed lever pessary, which she continued to wear until the fourth and a half month of gestation. During the pregnancy up to the close of the eighth month, I had frequent opportunities of examining digitally the condition of the cervix. At the last examination I could not recognize by the touch any appreciable diminution in the length of the cervix. It felt thicker, larger in its transverse measurements, and was softened. The second case was a multiparæ, in her seventh pregnancy. She had several very large varices. One especially large, and threatening in its external aspect, was situated on the right side, above Poupart's ligament, and pressed and rubbed against another immediately below. To prevent, if possible, enlargement and threatening rupture of these varices, I adjusted a bandage, which it became my duty to frequently inspect. During these examinations, I availed myself of the opportunity to learn the condition of the cervix. I could not appreciate any gradual shortening of the cervix. On the 13th of October, 1871, I was called in haste to see her. Found her in bed, prepared for labor; suffering much pain, which she alleged was labor pain. To determine the question of labor, I made a digital examination. The os was dilated, admitted the index finger, passed the first phalanx into the cavity of the cervix, felt the ovum at the internal os. The non-obliteration of the cervix decided the question of labor. Ordered an anodyne, and left her. She was up and well the next day. On the 2d November, twenty days subsequent to the last examination, she was confined. I was at her bedside early, though not at the beginning of labor. The cervix seemed entirely obliterated at the first vaginal examination. The third case was a multiparæ, in her fifth pregnancy. She had fixed the time of confinement on the 21st January, 1872, but was not confined until

February 13th. During the intervening three weeks she was several times seized with pains so closely resembling labor pains, that the non-obliteration of the cervix furnished the only diagnostic sign by which I was enabled to determine the question.

Confirmed in my views by these observations, I recur to the question at issue, and shall content myself with a simple collation of the various authorities on the subject.

Duncan (page 245, "Researches in Obstetrics"), in discussing the length of the cervix uteri in advanced pregnancy, says: "In discussing this subject, I intentionally omit the latter days of the ninth month of pregnancy. During these days, which are included in the full term of utero-gestation, silent and painless labor may be said to be really going on—I mean, that contractions of the uterus, usually without pain, are effecting the complete obliteration, from above downwards, of the cervical canal."

In the next paragraph, he adds: "This occasional source of pain and protraction in the first stage of labor at or near full term, is described by Weitbrecht as the cause of like evils in cases of abortion and miscarriage."

Again, at page 259, he says: "My statement, that the length of the cavity of the cervix uteri undergoes little or no change during pregnancy, is founded partly on results of vaginal examinations, and chiefly on the examination of the uteri of women that have died at different stages of utero gestation."

Cazeaux (page 132, "Theoretical and Practical Midwifery," fifth American edition) says: "Agreeably to the majority of French accoucheurs who have adopted the opinions of Desormeaux, the neck has lost, at the fifth month, about one-third of its length, one-half at the sixth, two-thirds or three-quarters in the seventh, three-fourths or four-fifths in the eighth month, and the remainder is effaced during the course of the ninth. And yet, I do not hesitate to pronounce all this an entire error, which was first pointed out by M. Stoltz, in 1826, and to which I also have constantly asked attention since the year 1839. During the last few weeks, its length, which until that time was intact, diminishes very rapidly, and even disappears by total effacement. . . . I have frequently been enabled, in primiparæ, to prove the truth of M. Stoltz's assertion."

Again, at page 136, he adds: "The whole length of the neck disappears in the last fortnight, being lost in the cavity of the body; the effacement beginning by the internal orifice, and gradually involving the neck from above downwards as far as to the external orifice."

Tarnier, the editor of Cazeaux, in discussing the precursory uterine contractions, at page 283 uses these very significant words: "Every one knows that they accomplish the effacement of the cervix at the end of gestation. Should an accidental cause increase their energy prematurely, the result is either abortion or premature delivery."

Robert Barnes, in his recent work, entitled "Obstetric Operations" (page 357), in controverting the doctrine that in cases of placentæ præviæ the hæmorrhage, during the last three months of pregnancy, finds its cause in placental detachment, due to the gradual process of cervical shortening, uses the following language: "This doctrine, passed on traditionally, and accepted almost without question, is undoubtedly founded on an anatomical and physiological error. Stoltz, Rœderer, Weitbrecht, and Matthews Duncan clearly show that the cervix proper contributes in no way to the reception of the ovum. I have frequently felt the cervical canal entirely closed above by the narrow os uteri internum at the end of pregnancy. I have also ascertained the truth of this by dissection of women dying after labor."

Meadows ("Manual of Midwifery," page 93) says "The cervix begins to shorten, or, rather, according to more recent observations, which, however, are not original, but only a confirmation of opinions expressed long since by Stoltz and Cazeaux, the cervix, by pressure from above, appears to shorten; but is really only increased in its lateral diameters, without any appreciable diminution of length from above downwards. This I have myself verified again and again."

From an essay on "Placenta Prævia," by Professor T. Galliard Thomas, published in this journal (Vol. I., page 2), I quote the following paragraph:

"Repeated hæmorrhages, occurring during the ninth month, as the os internum dilates under the influence of the painless uterine contractions which then occur."

I think I do the distinguished gentlemen no injustice in deducing the conclusion, from this language, that he holds the opinion that cervical effacement takes place near the close of gestation, and that during the process of cervical obliteration the "os internum dilates under the influence of painless uterine contractions."

At a meeting of the Pathological Society of the City of New York, January 25, 1860 (*New York Journal of Medicine*, March, 1860, page 252), Dr. Thomas exhibited the specimen of a uterus taken from the body of a woman who had died during the seventh or eighth month of pregnancy. In his description of this specimen, he says: "The cervix had not disappeared at all, but was somewhat increased in length, and a trifle wider at its upper than lower portion."

In the discussion which took place at the same meeting of the Society, Dr. Dalton remarked* that "he could say positively, from his own observation, that neither the os internum nor os externum disappeared at all, even up to the ninth month." "I am," said he, "very sure that I have seen both the os internum and os externum clearly marked in a case that died during delivery."

But to Professor Isaac E. Taylor is due the credit of having first promulgated the doctrine that the cervix uteri "remains intact up to the full term of pregnancy." In his essay published in the *Medical Times* for 1862, on the "Non-shortening of the Supra and Infra Vaginal Portion of the Cervix Uteri during Pregnancy," he submits the following propositions:

"1st. That the cervix uteri, supra and infra vaginal portion, does not unfold or lose itself during gestation in the body of the uterus, and the cervix uteri become obliterated or effaced at the full term of pregnancy, as Baudelocque, Gooch, Dewers, Meigs, Scanzoni, Montgomery, Bedford, and others believe.

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* *New York Journal of Medicine*, March, 1860, page 253.

"2d. That the cervix uteri is not lost or merged into the vagina by dilating from below upwards, and becomes obliterated by total effacement at eight to eight and a half months or full term, as Stoltz has taught, Cazeaux promulgated, Chailly and others believe; but it remains of its natural length, and is sometimes even longer.

"3d. That the whole cervix, supra and infra vaginal portion, remains intact up to the full term of pregnancy, and for several hours during the first stage of labor.

"4th. That the shortening, as it is termed, is only apparent to the touch, consequent upon the ramollisement and physiological hypertrophy that take place during gestation."

These conclusions Professor T. has verified by numerous observations, made through a series of years, beginning as early as 1852, and demonstrated by twelve post-mortem examinations. While they are opposed to the views taught by Stoltz, Cazeaux, and others, insomuch as they deny that the process of cervical shortening begins prior to the commencement of the first stage of labor, they are yet opposite to the views of Baudelocque, Gooch, and others, who maintained that cervical shortening began as early as the sixth month of pregnancy.

Duncan denies that Stoltz, who, in his inaugural essay, published 1826, called attention to the prevailing errors concerning the shortening of the cervix uteri during pregnancy, is entitled "to the credit of introducing the new view," and claims that to Weitbrecht is due "the credit of stating and illustrating by a dissection the true doctrine of the development of the cervix in pregnancy," who, in 1750, published his memoir, "De Utero Muliebri." Duncan, differing from Stoltz and Cazeaux, who concede a slight diminution of the length of the cervix, occasioned by the approximation of the two extremities in consequence of the cavity of the cervix "becoming more markedly fusiform and filled with its ordinary mucous secretion," insists that there is "little or no change," and in some cases an apparent elongation, thus corroborating the views of Professor Taylor.

M. Chailly ("Practical Treatise on Midwifery," Bedford's translation, page 45), in describing the condition of the cervix at the end of the eighth month, denies that the supra-vaginal cervix undergoes any change until subsequent to the completion of the eighth month; and asserts that the cervix in no manner contributes to the cavity of the womb until about the middle of the ninth month. "I have had," says M. Chailly, "occasion to notice, in women who have died at the eighth month of pregnancy, the integrity of this portion of the uterine cervix. Indeed, it is a fact which any one can ascertain for himself in practising the vaginal touch." Again, at page 51, in describing the condition of the cervix at the end of the ninth month, he asserts that in primiparæ the supra-vaginal cervix is not entirely "effaced until after labor has commenced."

Prof. B. Fordyce Barker, in a paper published in the *Medical Circular*, London, April 24, 1861, says: "During the last fortnight of pregnancy, the cervix diminishes very rapidly, opening from above downwards until it is wholly effaced."

Jacquemin held that the distinction between the external and internal os disappeared at the eighth and a half month. Prof. Miller, of Louisville, accepts the views of Cazeaux, and M. P. Dubois concurs in the opinion of Stoltz, that in no manner does the cervix contribute to the enlargement of the inferior part of the uterus during the sixth or seventh month.

THE USE OF ELECTRICITY IN THE TREATMENT OF THE DISEASES OF CHILDREN.*

By Dr. ULLERSBERGER, Paris, France.

(Prize Essay to which was awarded the prize of $100 in gold offered by the Editor of this Journal.)

Aphonia.

MYER, of Berlin, reports the case of a young girl with a crowing cough, the sequel of whooping-cough, which lasted from two to three minutes, and was repeated every quarter or half hour; the paroxysms terminated in aphonia. The disease increased in spite of the most active treatment. After two years electric medication was resorted to. Myer stimulated the nerve of the larynx by placing one of the electrodes in the direction of the recurrent laryngeal nerve, on the internal edge of the sterno-cleido-mastoid in the groove between it and the tracheal artery and œsophagus; the inferior electrode was placed on the transverse process of one of the cervical vertebræ, in order to be as near as possible to the origin of the vagus nerve. After sixteen séances, the attacks had already intermissions of from two to three hours, and at the end of twenty other séances they ceased entirely, and with them the aphonia disappeared.

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* Translated by Allen McLean Hamilton, M.D., New York.

SPASMS AND CONVULSIVE AFFECTIONS.

Spasmodic Cough.—A boy of twelve years of age was attacked in the beginning of the month of November, 1857, with a spasmodic cough. He was anæmic, of frail health, irritable, and destitute. The next month, the fits of coughing were succeeded by noisy spasms, which lasted from twenty to thirty minutes, and consisted of shrill and piercing cries. An anti-spasmodic treatment was ineffectual. The seat of the disease was the inferior laryngeal nerve.

Recourse was had to electrization. A feeble current was passed through the recurrent nerves on either side.

A plate communicating with the conducting wire was placed on the upper part of the neck, then, after giving the patient the right hand, and taking the other electrode in the left hand, the current was passed by means of the finger of the operator for about ten minutes, and by intermissions on the neck. After four séances the operations were performed directly, without the mediation of the operator, and the most violent spasms occurred, lasting three-quarters of an hour. The next day they recurred, lasting twenty minutes. They then disappeared entirely. Sulphate of zinc was administered, tepid baths, with strengthening diet, and exercise.

Local Spasm, Caput Obstipum, Torticollis.—In a young girl of thirteen years, the malposition of her head, and the impossibility of turning from left to right, were occasioned by a contraction of the clavicular portion of the trapezius muscle, which might be felt as a tendinous cord beneath the skin. Duchenne tried to force the antagonist of the contracted muscle to contract by a rapid discharge of the current. He directed it on the fascia of the healthy trapezius, not on the sterno-cleido-mastoid. The head turned visibly from the left to the right side, but after these first séances it did not return quite to its normal position; they succeeded, however, after repeated stimulation in their object. Of course, in order to obtain a perfect result time is required.

The vertebræ, by a forced position of the head, had likewise an unnatural position.

Electro-therapeutic treatment of spasm is already rich in cases, and one of the most experienced observers is Maurice Benedict. He treated, among others, the daughter of a cotter, aged nine years, suffering from tonic spasms, by directing the galvanic current on the gangliæ and mastoid process, continuing the séances two weeks and a half; the cure was perfect. He effected several other cures of idiopathic chorea. For example, a scholar aged twelve years; a girl the same age; the son of a laborer aged 12 years; a boy aged eight years suffering from general chorea minor. It required two months for the cure of this case, which lasted only a year, at the end of which time a relapse occurred, from which, nevertheless, he was radically restored. The son of a shoemaker, nine years old, being affected with choretic movements of the ocular and labial muscles, was cured by the same medication in eight weeks. A girl of twelve years of age had suffered with infantile eclampsia when she was but nine months old, later from *unilateral chorea;* a galvanic application only ameliorated her condition.

Golding Bird cured a girl of eight years of age of her chorea, who after six months relapsed, and was radically cured by galvanic treatment.

A boy, aged twelve years, who had suffered from tænia, was completely relieved, and like success attended a girl of the same age. Chorea is met with most frequently in the female sex between the ages of five and nine. This statistical fact was given to us by H. M. Hughes and E. Burton Brown. Of fourteen patients attacked with chorea, five were cured, one improved, three remained unsuccessfully treated, and in five the result was not noted. The daughter of a servant, nine years of age, emaciated and weak, suffering from St. Vitus' dance, was treated by Rudolphe Wecke. He subjected her to electric treatment, accompanied by tepid baths and cold spongings, by which the child became strong and thriving.

A boy, aged fourteen, son of a truss-maker, having submitted to the Faradaic treatment for two months and a half, experienced such a favorable result that he continued exempt from further attacks, and his general health gained appreciably. Giovanni Finco reports the following case: A girl, aged twelve, had suffered a series of nervous symptoms, such as neuralgia of the superior cervical nerves, accompanied with sharp pains in the epigastrium, of hyperaesthesia of the left side of the neck, and of the thorax. These symptoms were complicated afterwards with dysphonia and involuntary movement of the neck and arms.

They were repeated every day, commencing at half-past ten in the morning and lasting till nine at night, finally ending in gaping, great prostration, and pallor. All remedies used for a year and a half were unsuccessful, but the inducted current produced visible improvement. Therefore was used the constant current. The positive pole was put in one hand, and the negative pole was placed on the nape of the neck, the scapula, and the left side of the breast.

After five séances, an amelioration was perceived; after two months, a notable progress. At last, after a continuation of some weeks, not only had the cure become perfect, but the whole physical constitution of the patient had undergone a very advantageous change. Von Holtzbeck enriched the collection of electro-therapeutical cases of chorea by three cases of little girls aged seven and a half, ten and a half, and eleven years. In reviewing these cases, we can therefore affirm that chorea has found a powerful remedy in electrization.

Trembling, as it is seen often in children, is an affection to be treated by electropathy. Maurice Benedict tried it on a girl aged six years who had been suffering three months. The success was not entire. He only obtained appreciable improvement, but not complete cure.

Tetanus.—E. Pankow Mendel relates a case of traumatic tetanus in a little girl four years old whom he cured by four consecutive galvanizations. The same author furnishes, also, another case of idiopathic tetanus in a girl, aged eleven, who was similarly restored by the constant current employed for ten days.

PARALYSIS.

Paralysis contributes the greatest number of clinical cases to electro-therapeutics.

Paralytic affections of children often begin at birth.

Asphyxia or Apparent Death (Schientod).—It is fundamentally but a paralytic state—a momentary suspension of animation. Thomas S. Page ardently recommends electro-magnetism for children who are still-born, though he does not report any special cases.

The paralyses of childhood present many modifications and varieties. They are sometimes of a nosological character—central, peripheral, rheumatic dyscrasia; traumatic with effusion in the spinal canal. Faradization is of great benefit in doubtful cases, in relation to differential diagnosis and prognosis. Clinical observation shows us a case of paralyzed electro-muscular sensibility, then a paralysis of muscular contractility. Motility and motricity are powers of the muscles which respond to the stimulus of innervation by muscular movements. The electro-muscular contractility—that is to say, the faculty of the muscle to contract under the influence of electric stimulation, is either intra or extra muscular; electro-muscular sensibility is the power to appreciate by means of the nerves of muscular sensation, and to be susceptible to the action of electric currents. In cases of paralysis, as soon as the muscles are excited by the induced current, it is proved that the functional faculties of the intra-muscular nerves are still maintained, and these are the principles which are to serve as differential diagnostic and prognostic guides.

Faradization, applied in the paralyses of children, was opposed at the time it was first used. Duchenne, of Boulogne, profiting by the discoveries of Faraday, refuted in writing the objections to the operation. It is generally believed that the tender age of paralyzed children is a contraindication to the use of Faradization. Its opponents use as an argument the pain that the process would cause, the reaction that it would produce on the nervous centres, so irritable at that age, and the convulsions it might occasion.

It is evident that if a painful method is used, such as electro-puncture, the electro-cutaneous excitation with Faradaic needles, and Faradization by means of the rapidly intermitting current, these accidents could be caused, or terror might be excited in these little children which would soon render electrization inapplicable.

But in acting cautiously, and proportioning the medication to the degree of sensibility of the patient in using the method I would describe, originated by my father, energetic contraction can be obtained of sufficient power for the requirements of the treatment without producing nervous accidents.

The apparatus should be exclusively that of induction, the initial force of which is produced by a magnet, provided it presents the following properties:

First: To give a current of the first or second order.

Second: To give slow intermitting currents, with intervals of one or two seconds, at the will of the operator.

The second is to be only employed on account of its special property of producing more energetic muscular contractions without operating so painfully on the muscular sensibility, and to penetrate further than those of the first order.

We are satisfied in resting upon two authorities on medical electrization—the two Duchennes, father and son—who have had unusual experience as to the value and virtue of therapeutic Faradization in the treatment of infantile paralysis.

IDIOPATHIC PARALYSIS OF YOUNG CHILDREN.

It appears that such cases as are mentioned in works upon diseases of children are not always of an idiopathic nature; they are often due to rheumatic, traumatic, or mechanical causes. They assume the form sometimes of partial paralysis, sometimes a more general character; then as incomplete hemiplegia or paraplegia. Many partial paralyses are spontaneously cured, others atrophy the muscles, or terminate in fatty degeneration, the consequences of which are deformity of the joints.

According to the observations of Maurice Benedict, of Vienna, the galvanic treatment of spinal paralysis, by means of the current applied to the length of the vertebral column, is a slow operation, the results of which are unsatisfactory. Gotthold Scholtz has also made experiments to revive asphyxiated children, by means of the current of induction. He feels authorized to pronounce that weak electric currents, applied with the requisite caution, are more effectual in restoring expiring life than any other means. Electrization, he says, has the advantage of acting more quickly and surely than the remedies ordinarily used. This is his process: He fixes one electrode to the nape of the neck while passing and repassing the other over the cardiac region, allowing a feeble current to operate there. After one or two minutes he places the child in a bath, to be repeated, if necessary, after a few moments.

Scholtz assures us he has thus obtained the most perfect success in desperate cases.

Myer proposes to attain the same results by Faradization of the phrenic nerves, a method requiring weak currents to be applied with the greatest precaution.

Emanuel Klopsch, Directeur de l'Institute à Breslau, made a very favorable prognosis for electric medication in the treatment of idiopathic paralysis of children by the following case.

In a girl, nine years of age, who had been paralyzed in both legs nine months before the application of the electricity—caused, as M. Klopsch believed, in consequence of a serous effusion in the spinal canal—this author, by Faradization of the paralyzed extremities, effected a restoration of the sensibility in fifteen days. It is to be remarked that localized Faradization was used intermittently, and alternately with electric foot-baths, douches, and after gymnastic exercises. After four weeks the patient could stand, and in thirty-four days she began to walk, without crutches or the aid of a stick. Finally, at the end of two and a half months, she walked alone.

The same author reports the following cases: Wally Kreusel, aged 12 years, had a fall on stone stairs. By degrees paralysis supervened, with atrophy of the left leg; the patient dragged this leg, which was drawn up; the left half of the pelvis was depressed one and a half centimetres; the circumference of the thigh and of the leg was shortened one and a half centimetres, besides which she suffered pain the whole length of the sciatic nerve. Faradization of the muscle supplied by this nerve, and the direction of the current of the electric foot-bath towards the trunk of the same nerve, both accompanied with gymnastics, accomplished a complete cure at the end of eight weeks.

The paralysis disappeared together with the atrophy; all functional derangement ceased, as well as the pains.

Myopathic paralysis, in a boy aged seven years, in consequence of a fall which he had two years previously. He suffered from a weakness of the two rhomboid muscles, the trapezii and the latissima dorsæ muscles. This muscular affection had produced an abnormality of the relations of the scapulæ, the spinous processes, and the thoracic walls. This anomalous direction can be overcome at will, but immediately falls back to the same condition. The Faradaic reaction of the muscles affected was preserved, but diminished on the left side. A cure was effected.

Max Knorr cured by means of Faradization and gymnastics a case of *Ptosis paralytica* and paralysis of the left arm. He also cured, by the same means, four cases out of eight of paralysis. Dr. Paul Niemeyer succeeded in curing by Faradization central and idiopathic paralysis. Dr. Rudolphe Weeke, of St. Petersburg, restored a child suffering from atrophy resulting from hemiplegia in the space of one and a half years.

Fatty muscular atrophy, described by Aran, which cannot be stopped in its course by any other means, is not seldom cured by Faradization.

Duchenne of Boulogne (the son) has specially interested himself in this fatty atrophy of children.* He used Faradization with the object of diagnosis (that is to say, to see if there existed muscular contractility) and therapeutical treatment. He saw more than one hundred cases; but we should refer our readers to the original to study the success, the want of success, and the cases of relapse. We will quote from him the following cases in children.

Fatty Atrophic Paralysis in a girl four years of age. She had been, at the end of eight months, suddenly, without any known cause, after a slight indisposition, deprived of power in the left leg. Ten months after, the limb lost all power of motion. The child could not stand upright. The leg was visibly emaciated, but on measurement no notable difference was perceptible in its length. Electrization of the leg would not produce any motions of the foot, but the leg would feebly flex on the thigh. Faradization for some weeks restored the motion at the knee-joint, and the thigh upon the pelvis. The results of ulterior treatment have been most satisfactory; the child has greatly improved. She walks with ease, and we are led to hope that, by persevering, the limbs will regain their normal proportions, and the flexor muscles of the left foot their antagonistic tonic force and voluntary movement (*l. c.*, page 449).

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* *Archives Générale de Médecine*, vol. ii., 1864, pages 23, 184.

Paralysis of the Right Leg—Atrophy of the Tibialis Anticus.—Difference of seven centimetres in the length of the leg reduced to five centimetres after a year of electrization (*l. c.*, page 453).

We will call attention to a former case of Dr. Rudolphe Wecke, of St. Petersburg. The son of a landowner, aged five years, of scrofulous cachexia, was paralyzed on the right side at three months, after a stroke of nervous apoplexy. The arm and leg suffered an arrest of development, particularly the foot, which was always cold. The patient could walk, but very slowly, and always dragged the affected side. If he wished to advance more quickly, he would take two steps with the left foot. He presented a pale, weak face and form; he was taciturn and timid, and cried easily. Wecke attended him for a year and six months, at the end of which he was radically cured.

Besides Faradization, he had employed for the feet warm baths, prepared with *bouillon* ;* inunctions of oil were applied to the whole body, and the spine galvanized particularly.

Another case that we find is the seventh of the younger Duchenne (*l. c.*, p. 36). He treated a case of paralysis of the right arm, preceded by five days of fever and gastric attacks, in a girl thirteen years old. After four days of Faradization, return of the power of movement was seen, and the cure was complete in two months, except a portion of the deltoid. She was continually submitted to Faradization, and two months after an increase of the flexors was noticed in the front of the forearm and in the layers of the deltoid; the anterior third of that muscle preserves very little contractility; the posterior none at all.

Von Holtzbeck, of Brussels, succeeded in the same manner in restoring a boy, aged four years, from atropic paralysis by Faradization after four months of treatment.

Maurice Benedict, that faithful observer, reports (notwithstanding we have before quoted from him) some cases in which electropathy has proved very efficacious.

A young girl, aged nine years, suffering for a few weeks from paralysis of the rhomboid muscles, gained and relapsed alternately. Therapeutic electrization effected some amendment, and when she presented herself again, the amelioration was very slight. An orphan, aged twelve years, with a malposition of the left scapula, was restored, but she had relapses; the lower cervical and the first dorsal showed themselves plainly, and the vertebral column was depressed.

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* Beef essence.

After ten months of treatment, she was discharged. Although this case is not a form of paralysis, we would not separate it from the foregoing, both being founded on the swelling of the vertebral column.

The daughter of a merchant, aged seven, having been affected for five years with paralysis and emaciation of the deltoid and pectoral muscles of the left arm, as well as the trapezius, was quite restored, but she relapsed to paralysis and atrophy.

Dentition, so generally considered as the root of all diseases of children, is not always the original source, but sometimes, as we are shown by the following case: A child, a year old, of delicate constitution, cut at the same time the four incisor teeth of the upper jaw and two of the lower. This process of dentition had produced fever, which, accompanied by diarrhœa, lasted eight days. After having passed a night without sleep, he let his arm drop, the muscles of the scapula had lost their tone, and it was impossible for him to raise his arm. The muscles involved were atrophied; a cure after six or eight weeks was fully successful.

Maurice Benedict reports cases which are appropriate. They concern electro-therapeutic cure. The daughter of a pin-maker, aged nine years, had suffered three years from paraplegia, which had developed, alternating in amendment and relapse. A boy, aged eight years, seized suddenly four years ago with anæsthesia of the left arm and disturbance of movement in the left leg, then hemiplegia of the facial nerve of the left side, and, finally, twisting of the tongue obliquely toward the right side, both were visibly relieved by Faradaic treatment of four weeks (*l. c.*, p. 234). Another boy, aged eight years, who had had typhoid fever, and been hemiplegic for six years, was visibly improved by the same treatment. A third boy, who had attained the age of four years, suffered for nine months from paralysis and atrophy of the left arm and leg. He was treated by Benedict with the electrotherapeutic treatment, and was able to walk after two months. The same treatment ameliorated the condition of a girl, aged two years, who became paralyzed after a fever. Further, a boy, aged five years, who had never learned to walk, and who was affected with complete paralysis of the inferior extremities, was placed in a condition to walk with some support after a treatment of a year. Finally, a boy who was only twenty-two months old, and whose left extremity with the pelvic muscles had remained paralyzed after a bilious fever, experienced improvement by the same therapeutic mode, while a girl, aged four, was less relieved of her paralysis, which was the result of a peritonitis. With more success, the author treated a girl aged two and a half years, affected with a rachitic paralysis, as she was entirely restored. A girl, nine months old, over whose arm a carriage-wheel had passed, suffered atrophy of the arm with paralysis. She was decidedly relieved of the bad effects of this traumatic peripheral lesion. A reflex neurosis was radically cured in a boy of eight years of age. It consisted first in a stiffness of the right arm, and a like affection followed later in all the extremities. By a like success, the electro-therapeutic cure of a girl five years old was consummated, in whom the muscles of the shoulder and flexors of the forearm were paralyzed and atrophied (*l. c.*, p. 135). A little girl, aged two years, after a long exposure to the sun, lost her consciousness, and became paralyzed on the right side. After three months, her condition had not improved. She walked with difficulty, and dragged the foot. She was entirely restored by Faradization, which was continued three months. After eleven years, in 1853, this girl had made visible progress in her physical development, except that the limbs of the paralyzed side remained less full than those of the other side. A complete cure by Faradization was established in three months. We owe to Dr. F. R. Bärwinkle some interesting communications on the paralyses of children treated by electrization.

Spinal Paralysis.—A girl, aged seven years, affected with cervical vertebritis, with obliquity of the head toward the left side and paralysis of the right sterno-cleido-mastoid muscle, was treated unsuccessfully, and remedial measures were suspended.

An analogous case was in a boy aged six years, suffering from paraplegia of both legs following vertebral caries, with marked scoliosis, after a fall from a chair. He was subjected, without success, to Faradization for three months in thirty-seven séances. Bärwinkle obtained only once a slight result in nine cases of true paralysis.

Functional Paralysis of a Hysterical Nature.—In a boy aged twelve years, and of healthy parents, an obstinate irritating cough was followed by spasms of an automatic character, also paralysis, with increased extension of the legs. Seven séances, in which a steady current of moderate force was used along the spine, from the dorsal to the lumbar vertebræ of one side, while on the other side, the other conductor sent a current toward the crural nerves, with Faradization of the quadriceps extensor, worked a perfect cure.

(To be continued.)

FARADIZATION AND GALVANIZATION IN THE TREATMENT OF AMENORRHOEA.

BY A. D. ROCKWELL, M.D., of New York.

THE utility of some form of electrization in the treatment of amenorrhœa has long been recognized by the profession. This recognition, however, is decidedly vague and indefinite, and the use of electricity by the general practitioner in obstinate suppression or retention of the menses is exceptional.

I transcribe from my clinical note-book a few such cases, in order that renewed attention may be called to a method of treatment that I conceive to be all-important.

There is no stereotyped form of application that will answer in every case, neither can we expect to be uniformly successful; but I feel assured, from a somewhat extended experience, that a judicious use of the different currents and the recognized methods of applying them will yield results far surpassing the general belief.

The principal methods of application are:

1st. General Faradization.

2d. Localized Faradization (external).

3d. Localized Faradization (internal).

4th. Central galvanization.

5th. Peripheral galvanization (external or internal).

The first method (general Faradization*) is indicated in those conditions of debility where a general and powerful tonic influence is called for. The treatment is, as a rule, not disagreeable to the patient if carried out with the requisite care, and its secondary effects are sometimes marvellous.

Amenorrhœa associated with Anæmia—Recovery under general Faradization.

Case I.—Miss ——, aged 20, was suffering from a condition of excessive debility and anæmia. She was hysterical to the last degree, and it was with the greatest difficulty that she could be persuaded to submit to electrization. These symptoms had annoyed her for about six months, during which time the menstrual flow had decreased in quantity and had become irregular until, some two months before I saw her, it had altogether ceased. She was at once submitted to general electrization, and, although an exceedingly mild current was used, excessive faintness was produced, which lasted nearly twenty minutes. Subsequent applications were borne much more kindly, although the strength of the current was decidedly increased. Her menses returned after the eighth application, and during the treatment, which was continued for six weeks, the color returned to her cheeks, her step became firm and strong, her hysterical condition was entirely corrected, and at the very least it may be said that she was approximately restored to her usual health.

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* For a complete exposition of general electrization, its modus operandi, rationale, and effects, the reader is referred to Beard and Rockwell's work on "Medical and Surgical Electricity."

Amenorrhœa of four years' standing, associated with slight Anasarca and marked Obesity—Menses restored and other symptoms relieved by general Faradization.

CASE II.—Miss H., 25 years old, was directed to me by Dr. T. Cock, of New York.

For four years the patient had menstruated sometimes three times, sometimes but twice a year. She had increased enormously in size, her weight being 180 pounds, and there was some effusion of the legs and feet, as manifested by the indentations remaining after pressure with the finger. The patient was very plethoric, and suffered much from fulness and oppression about the head. It is proper to remark that Dr. Cock, before submitting the case to electrization at my hands, had for some time faithfully made use of the internal remedies that seemed most suited to it. The patient was annoyed by cold feet and hands and by sudden flushes of heat. As in my experience general Faradization has been more successful in equalizing the circulation than any other form of electrization, I determined to employ this method. In this as in the former case, extreme susceptibility to the current was manifested, but depending more on an excited mental condition than on any real sensitiveness of the nervous system.

The patient was under treatment from March 20 1871, to May 25, 1871, and received twenty applications. After the fifth séance the courses appeared and lasted two days. At the proper time during the course of treatment they reappeared and lasted some four days. The patient presented herself a few months after the cessation of the séances, and reported that not only the menstrual function continued to act regularly, but that she remained permanently better in every respect. The tendency to flushes of heat disappeared after the first menstruation, her extremities became warmer, and after the second menstruation she was entirely relieved of the watery effusion in the legs and feet.

An interesting but not altogether unusual result of the treatment was a marked decrease in flesh. During the administration of the first ten applications she lost some twenty pounds, and after the séances were discontinued she submitted to the Banting system, and was rewarded by a still further decrease in weight.

Amenorrhœa of a year's standing, associated with Vertigo and Debility—Recovery under general Faradization.

Case III.—Miss E. S., a school-girl aged 18, a patient of Dr. Nuby, was suffering from suppression that had existed a year. The resulting symptoms were periodical attacks of distressing vertigo, and a condition of nervous exhaustion that unfitted her for the slightest mental or physical exertion. The Faradaic current was alone used, and, as in the two preceding cases, the applications were quite general. The menses reappeared after the twelfth séance, resulting in approximate relief of the vertigo and a decided increase of nervous strength.

At the present time—six months since the function was restored—she continues regular.

Faradization localized externally is as a rule but slightly efficacious in the disease under consideration. The electro-muscular contractility of the abdominal muscles is so great that a current of but little tension can be used, and neither by reflex nor direct action can the great sympathetic in this way be decidedly influenced.

Faradization localized internally, however, is a very effective method of treatment, and frequently succeeds when general electrization seems to be entirely inoperative.

Formerly I was accustomed to use, for applications directly to the os, a metal ball the size of a large marble and neatly covered by chamois skin. This was mounted on a long insulated stem, and could be readily introduced. The chamois covering was used to render the current less painful, but lately I have discarded it. The application of electricity to the skin through metal electrodes is extremely irritating; but all mucous membranes, especially that of the os uteri, vagina, and rectum, are remarkably insusceptible to currents of ordinary tension, and bear metal electrodes as well as those of cloth or sponge.

Better than the round ball is a cup-shaped metallic extremity, into which the os can be made to fit very snugly.

I find that, by this form of electrode, the uterus can be more thoroughly and powerfully electrized than in any other way. I have seen amenorrhœa yield to the application of either pole internally, but the cathode is without doubt to be preferred. It is possible that the ascending currents, since its effects are more irritating than the descending, might in certain conditions prove most serviceable. The recomposition of the current at the negative pole or cathode is, however, far more powerfully manifest than at the positive pole or anode, consequently the uterine tissues are most decidedly influenced when the cathode is applied directly to the parts, and, practically, I am confident that it yields the best results.

Amenorrhœa associated with Spasmodic Contractions of the Muscles of Deglutition—Recovery follows two Applications of Internal Faradization.

Case IV.—Mrs. H., aged 35, a patient of Dr. C. P. Tucker, of New York, had for several years suffered excessively from a form of nervous prostration, partly hysterical in character, and which seemed in a measure to depend on an almost complete deafness which occurred suddenly after a season of excitement while she was yet an invalid from confinement. General electrization had, during the early part of 1870, very materially lessened these symptoms, and she had remained permanently better. In March, 1871, her menses ceased, resulting in a return, although in a less degree, of her old nervous symptoms. In October she began to be afflicted with vertigo and spasmodic contractions of the muscles controlling deglutition, which latter symptom progressively increased in severity until at times the patient could with difficulty take sufficient nourishment to satisfy hunger. I employed general electrization on two or three occasions, but, becoming satisfied that it was impossible to obtain any immediate result by this method, I resorted to internal Faradization, using the cup-shaped metallic electrode alluded to above, and thus localized around the os a powerful current of negative electricity. On the following day I repeated the operation, and in a few hours after the patient was rewarded by a flow somewhat scanty, and of a darker color than normal.

It was attended also by considerable pain in the uterus and excessive itching all along the course of the vagina. The distressing spasmodic symptoms about the throat ceased immediately and completely, and have not yet shown any evidence of returning. General applications were continued every other day for a month, markedly relieving her nervous condition. At the next menstruation the flow was quite normal, and to the present date the patient continues regular.

Amenorrhœa existing two and a half years—A copious Flow follows twelve Internal Applications of the Faradaic Current.

CASE V.—Miss E., aged 23, suffered from cold hands and feet, and a feeling of great fulness about the head, with vertigo, which symptoms depended, doubtless, on long-continued absence of the menses.

Aside from the above-mentioned symptoms, her general health and strength were unimpaired. As general electrization and galvanization localized externally gave no evidence of being of service, with the consent, and in accordance with the desire, of both the patient and her mother, I applied the current directly to the os by means of an exceedingly small ball-shaped electrode. Four such applications repeated at intervals of three days resulted in a copious flow, lasting forty-eight hours. Greatly to my surprise, the associated symptoms were not relieved to any very great extent, and, as the patient ceased her visits before the time for the second return of the catamenia, I was unfortunately not able to judge concerning the ultimate effects of the treatment.

In regard to the effects of purely central galvanization in retention and suppression, I am unable to speak with any degree of certainty, since in every successful case peripheral electrization was used. Considering the recognized effects of the galvanic current on the spinal cord and sympathetic system, I should say that we might, on theoretical grounds, reasonably expect this method to be of occasional service.

External galvanization has been successfully tried. The following, however, is the only case in which I have successfully used it after internal Faradization and general Faradization had failed :

Amenorrhœa existing five months—Recovery under Peripheral Galvanization (External).

CASE VI.—Mrs. S., a widow, aged thirty. The patient suddenly ceased menstruating five months previously, and, accompanying the cessation, she was almost immediately annoyed by a sense of fulness about the head with vertigo. When she applied for treatment, she stated that these abnormal symptoms had continued without abatement, and had rather increased in severity. A number of internal applications of the Faradaic current having been given without appreciable result, I localized as nearly as possible a galvanic current from twelve small-sized zinc-carbon cells through both ovaries and the uterus itself.

The catamenia returned twelve hours after the second application, which was given the day following the first. Just before the next menstrual period, the application was repeated, and was followed by the usual flow. The menses appeared the third time, preceded by no application of electricity. As to further results, I am uninformed.

I can refer to but a single instance where the current was applied successfully to the cavity of the womb.

It has been used as an illustrative case in another place, but, as it completes the illustration of the different methods of application that have been mentioned, I will venture to give it again.

Amenorrhœa by intervals for several years—Relief of Suppression by Intra-uterine Faradization with a *powerful Current after failure of External Applications, and also of Applications to the Os by the Uterine Electrode.*

CASE VII.—Miss S., aged twenty-three, was sent to me by Dr. Fordyce Barker, July 6, 1870. During all her menstrual life she had been more or less irregular.

At various times she had been relieved by Faradization of some kind, and had found by experience that it was necessary to use internal applications. Her general condition was not of the best, and suppression always brought general nervous derangement. I treated her at first by the uterine electrode (connected with the negative pole) against the os, and the positive either on the abdomen or lumbar region.

This treatment, repeated four times, brought on some appearance of blood, but not the free menstrual flow. One application, with the same strength of current, with the intra-uterine electrode for about the same time (ten minutes), brought on a profuse flow on the day following, *and the patient was no longer treated.*

In regard to the foregoing cases, it is not to be understood that I present them as in any way typical of the results to be expected in every instance, even under the most judicious and correct methods of electrical treatment. The failures are sufficiently frequent, as every one who has had much experience in this direction will readily testify. I am, however, confident that, could the testimony of other laborers in this field be given, it would fully confirm my statement, "that electrization in some form is our most potent weapon in the treatment of amenorrhœa." I am equally certain that any one who may hereafter give to this method the requisite study and a fair trial, will cheerfully acknowledge its merits.

AN INTRA-UTERINE FIBROID SUCCESSFULLY REMOVED BY ENUCLEATION.

By C. H. GIBERSON, M.D., Brooklyn, L. I.

MRS. M., aged 34, married, born in the United States, of nervous temperament and spare habit, the mother of five children, of whom the youngest is two and a half years.

She had always been in good health up to about a year since, when increased menstrual flow began gradually growing worse. Her general health suffered, and the metrorrhagia became so excessive that, during the past summer in the country, flooding was present seven weeks out of ten.

Early in September, 1871, I was consulted about the case, and on the 18th of the same month made a vaginal examination. The uterus could be distinctly felt above the pubis; it appeared regular in contour, though unusually large, and was somewhat tender on manipulation. It seemed anteverted, cervix was large, elastic, and congested, lips eroded, os sufficiently open to admit end of finger, whilst the inner was about normal. Canal of cervix and body measured three and a half inches. An indurated tender spot was observed to the left of uterus, and distinct from it, apparently in the broad ligaments. She complained of darting pains through it. These pains and the tenderness were always relieved by the hæmorrhages. The week following this vaginal examination her menses appeared, and, in spite of absolute rest in bed, with the employment of local and general treatment, a profuse flow continued ten days.

Sixteen days later, flooding came on more violently than ever before. Styptics in the uterine cavity, the cervix constantly plugged, and vagina firmly tamponed, only checked without controlling the hæmorrhage, which lasted thirteen days.

Nov. 4, seven weeks after the first examination, owing to the excessive bleeding and increasing size of uterus, some abnormal growth was suspected within its cavity. Yet the internal os was not more open than in its healthy condition. The organ was anteverted, and had a depth of four inches.

Nov. 8.—With cervix dilated, quite a large intrauterine growth was detected with the sound, firmly attached to the wall of body.

Nov. 12.—Dr. T. G. Thomas saw the case in consultation, and diagnosed fibrous polypus attached high up, near the fundus. He recommended an improvement of her general health before any operation for removal should be attempted. He also advised the tampon, with astringents locally, as probably the best means for controlling hæmorrhage.

Dec. 5.—She has been flowing twenty-one days in spite of our best efforts to arrest it, and her danger is imminent. After consultation with Dr. James R. Macgregor, of Yorkville, who rendered valuable aid throughout the progress of the case, it was thought best to have the operation performed as soon as possible. Dr. Thomas was communicated with, and, coinciding with our views, was invited to perform it.

Dec. 6.--The cervix thoroughly dilated and patient under ether, Drs. Thomas and Macgregor present, a more thorough examination was made. The growth could be distinctly felt, firm and smooth, strongly attached by a broad base to the posterior wall from a point just within the cavity of body up as far as the finger could reach. It was found to be a sessile submucous fibroid tumor. Two attempts to secure its base within the loop of a strong cord failed. Dr. Thomas then decided upon enucleation as the best means of removal. With blunt curved scissors he cut through the over-lying mucous layer at the lowest point of attachment, and with the finger stripped it off a portion of the tumor. He then proceeded to break through the firm fibres connecting the growth with posterior uterine wall. This was an arduous task, requiring a hand in vagina, with one finger through the dilated cervix slowly tearing away the tough base of attachment, whilst an assistant crowded down and steadied the uterus by firm pressure above the pubis. His hand becoming fatigued, I continued the same process of separation. This was kept up until the growth was held only by a comparatively small particle to the fundus uteri. The over-distension of vagina by hand caused some laceration of its mucous lining, and danger of opening the peritoneal sac was apprehended. She had been under ether an hour and twenty minutes, when, owing to these lacerations, the thinness of uterine wall, and especially the great difficulty in reaching the remainder of attachment, it was decided to desist, confident that nature would effect a complete removal of the tumor. Very little blood was lost.

The uterus was thoroughly syringed with a weak, tepid solution of carbolic acid; half a grain of morphine injected subcutaneously, and an anodyne suppository placed in the rectum. She rallied quickly and well. Opium was given freely during the first five days after operation. The vagina was syringed every six hours with the above solution, and fomentations kept applied to hypogastrium. The washings gave great comfort, and doubtless served to allay local irritation as well as to lessen the septicæmia. With each syringing fleshy masses and membraneous shreds were brought away. No unfavorable symptoms arose. Urine passed without much difficulty. Bowels remained quiet an entire week. No hæmorrhage whatever.

On the fifth day, after a few sharp uterine contractions, the great bulk of tumor had become completely detached, as was anticipated, and protruded from the vulva. It was the size of a large hen's egg, irregular in shape, with a tough, fibrous framework enclosing softer tissues more or less broken down. The microscope showed it to be a true fibroid.

On the following day, the sixth after operation, a tough, thin membrane, evidently the larger portion of the covering of the tumor, was extruded. The progress of case has been satisfactory, and now, the thirty-third day after the operation, she is about the house, has regained some flesh, has almost no discharge. the uterus appears healthy, its depth three inches, position normal, and no hæmorrhage has occurred. The regular period for menstruation has passed several days with no indications of its appearance.

A CASE OF HYSTEROTOMY.

By J. V. P. QUACKENBUSH, M.D., Albany, N. Y.

MRS. MADISON, a deformed dwarf, aged thirty years, was taken in labor with her first child, Nov. 19, 1871. Dr. Northrup of this city was called to see her, and found her in labor, with the os uteri undilated. Next day being called out of the city, he notified her he could no longer attend her, when she sent for a midwife, and remained in her charge till the evening of the 22d, when I was called in. I found her pains frequent and severe, and on examination I found the head firmly compressed and trying to enter the superior strait of a deformed pelvis. I at once saw the impossibility of a natural delivery, and, assisted by Dr. C. H. Paten, I performed craniotomy, but found that the skull, though collapsed, could not be drawn through the contracted strait. Nothing now remained for the woman save the chances which the Cæsarean operation, performed under unfavorable circumstances, might offer. As the patient was exhausted by the protracted labor and want of rest, we thought an opiate would be desirable, and I gave her one-half grain of sulphate of morphine, which procured her a good night's rest, and she awoke refreshed on the morning of the 23d. I now performed the operation, assisted by Drs. Boulware, Hun, Paten, and Thompson; Dr. Robertson and Mr. Lyon also being present. Dr. Thompson having administered the ether, and the patient being fully anæsthetized, I made the incision through the abdominal walls from a point one-half of an inch below the umbilicus to within two inches of the pubis. The wound being laid wide open and the intestines drawn one side, the distended uterus was brought fully into view. An incision four inches in extent was made through the walls, through which the fœtus was first extracted, and then the placenta was removed through the same orifice. In making the incision through the uterine walls, an artery was severed, and considerable hæmorrhage ensued, which could only be restrained by the introduction of a silver suture, which we used, with a second one to bring the gaping edges of the wound together, as the uterus remained in a state of inertia. After we had cleansed the cavity of the abdomen, we brought the edges of the external wound together, and kept them in this position by five deep silver sutures, and four hare-lip pins twisted in figure-of-eight style, with silk thread. The surface of the abdomen was now cleansed with warm water, and adhesive straps drawn between each of the sutures, and a compress and bandage applied around the body. The patient now came from under the anæsthetic, appeared well, and only complained that the bandage was rather tight. She remained comfortable during this day, Thursday, slept well during the night; remained in the same condition Friday and Friday night. On Saturday morning the case appeared encouraging, but in the afternoon her breathing became laborious and her pulse much accelerated. During the night she became delirious, and died of peritonitis on Sunday morning, having survived the operation seventy-two hours.

The following are the probable causes of the unfavorable result of this case:

1. The long duration of the labor, which had continued for ninety-six hours; for it is found that "prolonged muscular action not only reduces the strength of the patient, but favors hæmorrhage from the uterine incision and the utero-placental sinuses, by the induction of uterine muscular inertia, and consequently the failure of prompt contraction after the removal of the fœtus."

2. From the "general exhaustion, which favors the production of a fatal result from shock, peritonitis, and septicæmia."

3. My resorting to the performance of the operation of craniotomy, prior to the Cæsarean section, which caused the patient additional exhaustion; and,

4. The necessity of using sutures to draw together the wound in the uterus, caused by the want of contractility of its tissues.

With the light of experience afforded by this case, should I meet a similar one, I should operate promptly and at once; for I think these cases promise success as much as do those where ovariotomy is performed; for in the former you find your patient in health, in the latter your patient has undergone the exhaustion consequent upon diseased action for one, two, or three years.

REPORT OF A CASE OF SOLID CANCER OF THE OVARY OF UNUSUAL SIZE.

By JAS. L. BROWN, M.D., New York.

In the early part of November, 1871, Margaret S., æt. 39, married, the mother of four children, of whom the youngest was four and a half years old, came to the out-door department of the Woman's Hospital to seek advice on account of a large abdominal tumor. She was there seen and examined by Dr. Charles S. Ward, who had charge of the class in my absence, and who, recognizing the case to be one of peculiar interest, sent her to me. I obtained from her the following history: In December of the previous year (1870), while she was in the enjoyment of good health, her menses stopped, and she supposed herself pregnant.

After an absence of three months they reappeared, in March, April, and May, when they again ceased, and had not since returned. In June, still supposing herself to be pregnant since December, she felt what she thought were feeble movements of the fœtus. In July, however, she began to notice that she was not so large as she ought to be in the seventh month of pregnancy, and that her breasts had not increased in size. She observed, moreover, that the abdominal enlargement was chiefly on the left side, and that she could move the tumor about quite freely.

On the 12th of July, during the riot, she accidentally received a severe blow on the right side of the abdomen, which was followed by an attack of what appears to have been peritonitis of moderate severity. She saw several physicians about this time, all of whom, she says, concurred in the opinion that she was pregnant, but that the child was probably dead. From this time the swelling began to increase rapidly, filling up the abdomen and of late expanding laterally and towards the groins. Her general health became much impaired, and she was greatly reduced in flesh and strength. She had improved somewhat during the three weeks immediately preceding her visit to me, but she was still quite weak. On examination, I found her quite emaciated, and presenting a well-marked appearance of cachexia. Pulse 115, but tolerably full. Respiration embarrassed and accelerated. No fever. There was some œdema of the legs, which, she said, had only appeared within a few days. The abdomen was greatly enlarged, giving the following measurements: Circumference above the umbilicus, 41 inches; circumference over the umbilicus, 44 inches; circumference below the umbilicus, 42 inches.

The umbilicus, together with the integument immediately surrounding it, was raised above the rest of the abdomen, forming a hemispherical, bladder-like swelling about as large as an orange of medium size, which, on pressure, could be flattened out and made to disappear. The skin around the umbilicus was thin, and of a brown color from deposit of pigment. On palpation and percussion the abdomen was found to be almost entirely occupied by a large tumor, which appeared to be everywhere solid. Its upper margin could be felt about midway between the umbilicus and the ensiform cartilage. It extended entirely across the abdomen, and was lost below in the pelvic cavity.

The intestines were found crowded up towards the liver, the latter organ being displaced upwards. A small amount of fluid could be detected in the peritoneal cavity. On examining per vaginam, the whole roof of the pelvis was felt to be hard and unyielding, as it is usually found in cases of chronic pelvic peritonitis. The cervix uteri was drawn upwards and almost lost in the mass above.

In forming a diagnosis, I was led to regard the tumor as malignant, from its history, and to select the ovary as the seat of the disease chiefly by exclusion. But, inasmuch as solid tumors of the ovary are rare, and solid tumors of this size almost unknown, I had the woman admitted to the Strangers' Hospital, where she could be seen by Drs. E. R. Peaslee and T. G. Thomas in consultation.

After a careful examination of the patient, both of these gentlemen were inclined to concur in the diagnosis already made, although neither of them had ever seen a solid tumor of the ovary of a size at all approximating to this. In view, therefore, of the uncertainty of the case, it was agreed in this consultation to make a small incision through the thin skin of the pouting umbilicus, and see if anything further could be ascertained as to the character of the growth. The patient was accordingly anaesthetized, and an incision about two inches in length was made by Dr. Thomas through the umbilicus.

As seen and felt through this incision, the tumor was everywhere smooth and solid. It was not deemed expedient to make an incision long enough to trace the tumor to its origin or to explore the pelvis. On recovering from the anaesthetic, the patient was taken with vomiting, which persisted with only short intervals for forty-eight hours, when she died from exhaustion. At the autopsy, which I was obliged to make hurriedly the abdomen only was examined. Its cavity was found almost entirely occupied by a large tumor, which was found to spring from the left ovary. There was a small amount of fluid in the peritoneal cavity, which was estimated at about two quarts.

A few adhesions were found indicating the existence of an old peritonitis.

The right ovary was also diseased and enlarged to about the size of a turkey's egg. The uterus was healthy, as were also the abdominal viscera.

The tumor, when first removed, weighed nineteen pounds, and was larger than the pregnant uterus at full term. On section, it was found to be tough and fibrous in structure, and to have in its interior a few small cavities containing a purulent-looking fluid. One of these cavities, which was larger than the rest, would probably hold seven or eight ounces. The first section, made directly through the centre of the tumor, did not, however, pass through any of these cavities, but gave the same impression of uniform solidity that the exterior of the tumor had done. The accompanying engraving, taken from a plate of Lebert, with which the tumor in its recent state was compared, so closely resembles its appearance when laid open, that it may be regarded as an excellent likeness of it. A portion of the tumor was sent to Dr. Edward Curtis, microscopist to the Strangers' Hospital, for examination, and its structure is thus described by him: "I found the ovarian tumor to be a firm, solid mass, which on section under the microscope was found to be composed of a dense stroma of fibrous tissue, the bands of fibres being broad and interlacing in every direction, and the cellular elements of the tissue largely developed. Ramifying through the meshes of this fibrous stroma, but in rather scanty proportion, were collections of epithelioid cells, the nests, in the sections, appearing as irregular, long, narrow bands of cells. From this structure the tumor belongs to the category of the carcinomata, the microscopic appearance, in fact, being very like that of many scirrhous cancers of the breast."

True cancer of the ovary of any kind is infrequent, and a solid ovarian cancer of this size is of such very rare occurrence as to constitute it a sort of pathological curiosity.

The nearest approach that I have been able to find to this case, in a hasty examination of the literature of the subject, occurs in Lebert's "Pathological Anatomy," where a description of what is there called an "enormous cancerous tumor of the ovary" is given, the tumor weighing eleven pounds. The plate accompanying that description so closely resembles the appearance presented by this tumor when first laid open, that it might readily pass for a faithful likeness of it. Although there are several points of interest connected with this case, I shall merely allude to one—the question of diagnosis. Before the patient came under my observation, she had already been examined by two experienced gynaecologists, both of whom were of the opinion that the case was one of fibrous tumor of the uterus; and, in view of the exceeding rarity of large, solid tumors of the ovary, I might have entertained the same opinion, in spite of the history of the case, had it not been that, by one of those curious coincidences by which rare cases so frequently occur in couples, I had seen, in consultation with Dr. Willmarth, of Orange, N. J., some three months previously, a case very nearly parallel to this, in which, basing my diagnosis chiefly on what I then supposed to be the fact, that solid tumors of the ovary never attain a large size, I gave it as my opinion that the patient was suffering from a fibrous tumor of the uterus that had grown with exceptional rapidity. In that case the patient was only 24 years old, had suffered from profuse haemorrhages, and had a tumor of such exceeding density that it was difficult to divest the mind of the notion that it was a fibrous tumor. The examination per vaginam served, too, to strengthen this impression, for the cervix uteri could be traced directly into the mass of the tumor, the continuity of tissue appearing to be perfect. The depreciation of the woman's health, and the general appearance of cachexia that she presented, I was inclined to attribute to loss of blood. The one thing that I could not reconcile with the diagnosis that I made of fibrous tumor, was the rapid growth of the mass, which had only shown itself some three or four months previously to my seeing the patient.

She died about two months after I saw her, and at the autopsy the uterus was found to be perfectly healthy, but both ovaries were the seat of scirrhous disease, being enlarged nearly equally, and weighing together eleven pounds. The microscopical appearances were almost identical with those already given.

Having the experience of that case to guide me, I had but little difficulty in arriving at a correct diagnosis in this one, but a reference to any of the standard works on gynæcology or general pathology will show how constant is the statement that solid cancer of the ovary seldom grows larger than an orange and very rarely attains the size of a fœtal head. It is not surprising, therefore, that the mere size of a solid tumor of this kind should militate against the idea of its being of ovarian origin.

ON LACERATIONS OF THE PERINÆUM, SPHINCTER ANI, AND RECTO-VAGINAL SEPTUM—THEIR PREVENTION AND SURGICAL TREATMENT.

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THE consequences of extensive laceration of the perinæum and recto-vaginal septem occurring during child-birth are oftentimes so lamentable that the prevention of this accident, when possible, and its cure by operative treatment when it has occurred, must be regarded as subjects of the highest obstetric interest.

A great diversity of opinion exists both as to the proper means of preventing this accident and as to the proper mode and time of attempting its treatment, yet these questions are either altogether ignored, or barely alluded to, in some of the standard modern text-books on obstetric medicine and surgery.

The differences of opinion and of practice still existing on these points were well illustrated during a discussion which took place in the Obstetrical Society of Edinburgh last session, when a paper of mine on "The Immediate Treatment of Laceration of the Perinæum" was read.

Being anxious to elicit the opinions of other obstetricians as to the propriety of the plan of treatment I adopt in these cases, I now submit the results of an enlarged experience of the immediate and secondary treatment of lacerations of the recto-vaginal septum, sphincter ani, and perinæum; on the latter of which subjects I must again refer to some of my former cases and observations in addition to many new ones.

The advantages of the immediate treatment of these accidents, and of the early removal of the sutures in such cases, are points to which I am particularly desirous to invite consideration. The reader will be assisted in deciding these questions by referring to Table No. 1, showing the mode of treatment adopted, and the result, in different cases operated on.

As the importance of lacerations of the perinæum depends mainly on their extent, these accidents may be divided into six classes, namely:

1. The laceration may be confined to the fourchette and anterior fibres of the perinæum. This is a matter of but little consequence, as it very commonly occurs in first labors, and generally heals without any special treatment within a few days.

2. Lacerations sometimes extend from the fourchette to the sphincter ani, but not through the latter. This is the most frequent variety of laceration, and is a serious accident.

3. Rupture of the perinæum may extend through the external sphincter, but not beyond it. In such cases it is possible, although not probable, that the power of controlling the action of the bowels may be retained without any surgical interference, by the union of the lacerated surfaces, or by the internal sphincter assuming the functions of the external one.

4. The laceration may extend through the recto-

vaginal septum. This accident, by which the vagina and rectum are converted into one horrid cloaca, from which fæces and flatus escape without any power of control or consciousness, is fortunately a comparatively rare occurrence, and is the most lamentable mishap of a non-fatal kind that can befall a woman during childbirth.

5. The perinæum may be torn through in the centre, leaving the anterior and posterior portions intact.

6. Rupture of the recto-vaginal septum may occur without any laceration whatever of the perinæum.

The two last are both exceedingly rare accidents. A few years ago, I had an opportunity of seeing an instance of the last-mentioned form of laceration in the case of a shoulder presentation to which I was called from the hospital. On my arrival, I found the arm of the child protruding through the sphincter ani of the patient. I may add that I delivered this woman by turning, in the ordinary way, *per vias naturales*, and that she made a good recovery.

The Causes of Laceration of the Perinæum and Recto-Vaginal Septum.—In the majority of cases, this accident results from the perinæum being neglected, or badly supported, during the expulsion of the child's head and shoulders from the vulva. In Dublin, where the importance of supporting the perinæum at the proper time during labor is so generally recognized and acted on, lacerations of this part most commonly occur among the poorest class of midwifery patients, who have been attended by some ignorant midwife or neighbor in place of availing themselves of the advantages of the lying-in hospitals or other maternity charities of the city.

The after-effects of lacerations of the perinæum are even more distressing with patients of the working class than is the case with women of a higher social condition. For, as I remarked in my first communication on this subject—and increased experience of the intimate domestic habits of the wretched denizens of the crowded tenements of the lanes and back streets of the capital of the poorest country in Europe has confirmed the observation—the wives of our artisans and laboring-men undergo far more hardship and privation, and at the same time perform as much labor as their husbands. The whole of the domestic duties of women of this class, such as washing, cooking, carrying children, etc., all act as powerful predisposing causes of prolapse of the womb; and, therefore, when the support that should be afforded by the perinæum is taken away by the accident we are now considering, not only is the tendency to prolapse increased, but, moreover, the possibility of restoring and maintaining the uterus and vagina in their natural position by means of a pessary is destroyed.

Ruptures of the perinæum and recto-vaginal septum may occur under the most judicious management, and from causes which the accoucheur has no power of obviating. In some instances, the laceration is caused by the restlessness of the patient, who, during the momentary delirium that sometimes attends the expulsion of the child, may suddenly throw herself forward, and thus withdraw the perinæum from the accoucheur's protection at the very instant that support is needed. Or, lacerations may be produced by the patient's violently forcing down at that moment in opposition to her medical attendant's counsel. Or, the accident may result from malpresentation or malposition of the head, or from exostoses, or from malformations of the pelvis, altering the direction of the lower pelvic plane, and directing the expulsive force downwards and backwards on the perinæum, instead of downwards and forwards through the vulva.

Lacerations of the perinæum and sphincter ani frequently occur in cases of precipitate labor when the head of the child is forced through the outlet before the perinæum has had time to expand and accommodate itself to the strain put upon it, and before any precautionary measures can be taken.

A rigid and undilatable state of the parts is one of the most frequent predisposing causes of lacerations of the perinæum and recto-vaginal septums. These may result from a puffy, œdematous condition of the parts, or from parturition occurring for the first time at a very late or very early period of life; and, indeed, at all ages it will be seen, on referring to the statistical table appended to this memoir, that primiparæ are more subject to these accidents than multiparæ.

Another predisposing cause of these lacerations is a perinæum abnormally long, or, in some rarer instances, one abnormally short; the parts in the latter case being so small that the fourchette closely approximates to the sphincter ani, the vulva being at the same time so constricted that there seems to be no room for the escape of the child *per vias naturalis*, and hence an artificial passage appears inevitable for this purpose. In the greater number of cases, however, lacerations of the perinæum and recto-vaginal septum are caused by injudicious practice. The direct causes of laceration in this way are:

1st, and most commonly, that neglect of affording manual support to the perinæum at the proper time during labor which is now inculcated and practised by several eminent British obstetricians.

2d. The neglect of timely instrumental assistance in cases of difficult labor.

3d. The premature or ignorant employment of instruments in such cases.

In nearly one-half of the cases of laceration from all causes, of which an account will be found in another part of this memoir, the accident resulted from the neglect of supporting the perinæum. This neglect occasioned more than double the number of lacerations produced by the next most frequent cause, namely, rigidity of the perinæum; and these two causes together produced rather more than two-thirds of the total number of lacerations referred to.

Those who oppose the practice of supporting the perinæum do so on the ground that this procedure, when too long continued, too early commenced, or too forcibly used, tends to dry up the natural secretions, and causes the perinæum to assume a rigid, inflamed, irritable, and heated condition most unfavorable to natural dilatation, and leading, as an almost necessary result, to laceration. But this argument is obviously fallacious, being directed against the proper use of a practice founded on experience, from a consideration of the ill effects which might result from its possible abuse. I shall have occasion to refer to this point again when I come to speak of the prevention of perinæal laceration.

Recto-vaginal and perinæal lacerations may be produced during extraction with the forceps. The operator may use undue force or haste in accomplishing the delivery of the child's head. I need not say how reprehensible the practitioner would be who would thus subject his patient to the miserable consequences of an uncured recto-vaginal laceration. Again, the misdirection of the traction made with the forceps may occasion the rupture: and so, too, may the neglect of what I regard as an essential precaution, viz., the removal of the posterior blade before the head is pressed through the vulva,* or the not infrequent error of making pressure in such cases on the instrument through the expanded, thinned, and almost transparent perinæum, with the idea of directing the child's head forwards.

The Manner of Preventing Laceration during Labor.—To no class of cases does the old adage, that "prevention is better than cure," seem more applicable than to the present, when we bear in mind the painful consequences of this accident and the frequent failure of all efforts for its cure. The means of preventing laceration are:

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* See "Lectures on the Forceps in Midwifery Practice." By Thos. More Madden, M.D. London. 1869. Also, "The Dublin Practice of Midwifery." Edited by T. More Madden. London. 1871. P. 148.

1. To support the perinæum at the end of the second stage in every case of labor.

2. As far as possible to prevent the patient from bearing down whenever there is evident danger of laceration.

3. When this accident appears otherwise inevitable, it may sometimes be obviated by incising the perinæum in such a manner as to afford a sufficient passage for the child. and at the same time, protect the mother from the possibility of a recto-vaginal laceration.

The reasons for supporting the perinæum are so obvious that I should be almost ashamed to reiterate them, were it not that nowadays we are instructed by some eminent authorities to abandon this time-honored and rational rule of practice. Any one, however, who, disregarding theories the only merit of which is their novelty, observes the phenomena of the latter part of the second stage of natural labor, when the child's head is emerging from the vulva, must see the expediency of affording proper support to the perinæum at this time.

In every case of labor, laceration of the perinæum would be inevitable, were it not for the gradual relaxation and expansion of the perinæum over the child's head by which it is distended. But. if this expansion has not taken place, and if the child's head be driven against the perinæum with an expulsive force which has been estimated by one of the most eminent modern authorities on the subject—namely, Professor Haughton—of no less than five hundred and seventy-seven pounds, or nearly a quarter of a ton, pressure on the child,* and which (without discussing the accuracy of this calculation) all must at least admit to be very great; and if, moreover, this immense pressure be applied before the parts have had time to accommodate themselves to the strain thus put upon them, as occurs in cases of precipitate labor, or if the parts be unyielding, as in cases of rigidity of the perinæum, this structure must be lacerated, unless we take care to obviate this by supporting the perinæum at the proper time and in the proper manner, or by incising it, as the case may require.

It has recently been proposed, in cases of impending laceration of the perinæum during labor, that an incision should be made through the thin, expanded structures so as to relieve the existing tension. I have put this suggestion into practice in several cases with great advantage, as the perinæum was thereby generally saved from laceration, which had previously appeared inevitable. Moreover, the wound thus made was limited to the extent of the incision, and generally healed in a few days without any special treatment. I do not recommend this measure, however, excepting in those comparatively very rare cases in which well-directed manual support would fail to protect the perinæum.

History of the Operation.—Until a comparatively recent period, the treatment of recto-vaginal and perinæal lacerations was almost entirely neglected by British obstetricians. The immediate treatment of cases of this kind was either ignored or expressly condemned by the older English obstetric writers, as, for instance, by Ould,[1] White,[2] Denman,[3] Osborne,[4] and Hamilton.[5] Even by some modern writers this question is similarly treated, as, for example, by Burns,[6] Davis,[7] Merriman,[8] Murphy,[9] and Ramsbotham.[10]

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* "On the Muscular Forces Employed in Parturition," by the Rev. Professor Haughton. Dublin *Quarterly Journal of Medical Science*, May, 1870, p. 166

The treatment of the accidents which form the subject of this essay has of late years been improved and modified by many surgeons and obstetricians. Amongst these may be named Dieffenbach, Roux, Velpeau,[11] Verhæghe,[12] Langenbeck,[13] Jobert,[14] Roubaix,[15] Hervieux,[16] and Richet,[17] on the Continent, and Mr.

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[1] "A Treatise of Midwifery." In Three Parts. Dublin. 1742.

[2] "On the Management of Pregnant and Lying-in Women." London. 1785.

[3] "Introduction to the Practice of Midwifery," sec. viii. London. 1787.

[4] "Essays on the Practice of Midwifery." London. 1792.

[5] "A Treatise of Midwifery," p. 306. Edinburgh. 1781.

[6] "The Principles of Midwifery," 401. London. 1843.

[7] "The Principles and Practice of Obstetric Medicine," vol. ii., p. 1077. London. 1836.

[8] "Synopsis of Difficult Parturition." Fourth Edition. London. 1826. P. 110.

[9] "Lectures on Parturition." London. 1845.

[10] "Obstetric Medicine and Surgery." London. 1844.

[11] "Nouveaux Eléments de Médecine Opératoire," p. 459. Bruxelles. 1832

[12] "Sur la Guérison des Ruptures du Périnée." Bruxelles. 1852.

[13] *Gazette des Hôpitaux*, January 23, 1853.

[14] *Gazette Heb. de Médecine*, Nov. 10, 1854.

[15] *Journal de Médecine de Bruxelles*, Feb., 1859.

[16] *L'Union Médicale*, April, 1861.

[17] "De la Périnéographie." Paris. 1869.

Davidson,[1] Mr. Hilton,[2] Dr. Leishman,[3] Mr. Lane,[4] Dr. Skinner,[5] Dr. Barnes,[6] Mr. Spencer Wells,[7] and, above all, by Mr. Baker Brown,[8] in this country.

I shall first briefly allude to some of the most important of the various plans of treatment recommended by some of the authorities just named, and then contrast them with that I myself prefer.

Dieffenbach, before the insertion of perinæal sutures, made two elliptical incisions through the superficial tissues on either side of the wound and parallel with it, and, where there was extensive loss of substance also, recommended the transplantation of an adjoining portion of the skin.

Mr. Hilton, of Guy's Hospital whose operation has been imitated by several recent English and American operators, succeeded in some very unpromising cases in obtaining union of extensive perinæal lacerations by the subcutaneous division of the coccygeal attachments of the lavatores ani and external sphincter ani muscles.

MM. Langenbeck and Verhæghe recommend in their cases, very ingenious but very complicated operation. This consists in the denudation of the lacerated surfaces, and the dissection of the recto-vaginal septum so as to separate the posterior wall of the vagina from the anterior wall of the rectum for some distance. These steps are to be taken before the insertion of the sutures, after which two similar incisions are to be made, as in Dieffenbach's operation, for the purpose of taking the strain off the sutures.

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[1] *Lancet*, May 4, 1839.

[2] *Guy's Hospital Reports*, vol. viii. part ii. p. 401. 1871

[3] *Glasgow Medical Journal*, January, 1860.

[4] *Medical Times and Gazette*, December 29, 1860.

[5] *British Medical Journal*, August 17, 1861.

[6] "Lectures on Obstetric Operations." Second edition. 1871. P. 347

[7] *Guy's Hospital Reports* New Series 1870 Vol. i. p. 307

[8] "On Ruptures of the Perinæum."

Foremost amongst those who have improved this operation and extended its employment in England is Dr. Baker Brown. This well-known surgeon operates in such cases in the following manner: Having first emptied the patient's bowels by enemata, he places her under the influence of chloroform in the ordinary lithotomy position. If the laceration is not recent, the edges are perfectly denuded, the sphincter ani is divided on both sides of its attachment to the coccyx, and three points of quilled suture are introduced to bring the deep parts of the wound together, whilst the superficial union is secured by three or four points of interrupted suture.

In a certain proportion of cases operated upon in the manner recommended by Dieffenbach and Roux, the closure effected is not complete at the inferior angle of the suture, leaving there a fistulous opening. This I have succeeded in closing in one case by the use of the wire cautery; and I have never met with another instance of the kind in all the cases of operation for the restoration of the perinæum that have come under my observation. Still, however, the occurrence of a vagino-perinæal fistula is a complication we must always be prepared for. A recent French writer has suggested a plausible theory to account for this inconvenience, as well as a very ingenious operation to obviate its occurrence. The cause of vagino-perinæal fistula in such cases, according to the author referred to, M. Richet, is the accumulation of the vaginal and uterine secretions at the base of the line of suture, at its point of meeting with the vaginal passage directed at right angles with it. To prevent this, M. Richet suggests the formation of a line of union presenting an inclined plane sloping towards the natural outlet. The operation by which he proposes to effect this is thus described by M. Richet: "By an incision which follows the curve presented by the perinæal rent from the base of the left major labium carried to the right, I divide the cicatricial surface into two equal parts, one anterior and the other posterior. This incision divides the tissues to the depth of one millimetre; then I dissect towards the vagina a semicircular piece, making thus separate the vaginal septum from the sides of the perinæum to the extent of from eight to ten millimetres or so, and I thus form a semicircular flap, which I raise towards the vagina, and I adapt the bleeding surfaces, opposed back to back, by means of several deep metallic sutures, the threads of which are brought out of the vulva. I have thus constituted a sort of inclined plane, which raises the posterior plane of the vagina insensibly as far as the orifice of the restored vulva, forming thus a kind of spur, upon which the vaginal fluids will be conducted outwards without possible infiltration beyond the line of suture, itself sufficiently closed, and presenting in the median line a sort of jutting crest with two lateral branches."

M. Richet then completes the remaining steps of the operation by the plan recommended by Roux and Dieffenbach, which has been already sufficiently described.

Treatment Recommended by the Author in Recent Perinæal and Recto-Vaginal Lacerations.—The operation performed in the majority of the cases reported in the accompanying table was a very simple one, when compared with any of the complicated and elaborate surgical procedures which have been referred to. Some surgeons appear to delight in operations so complicated and difficult that none who are less skilful, or rather who are less expert, than themselves can attempt the performance of. But the aphorism of the great French surgeon who many years ago asserted that "the simplicity of an operation is the measure of its perfection," should never be forgotten.

The operation I am about to speak of is not only very simple in its performance, but moreover has been very successful in its results. I have resorted to it in forty-three cases of recent laceration of the perinæum, sphincter ani, and recto-vaginal septum. In twenty-six of these cases it was completely successful, in seven it was partially successful, and in ten it failed. The operation in question consisted in the immediate approximation of the edges of the wound, and the maintenance of the parts in their normal position by means of proper sutures and bandages until union by the first intention was effected, or had failed to take place.

The success or failure of this plan of treatment depends mainly on two points, viz.: First, the early introduction of the sutures, which should be introduced, if possible, *immediately* after the accident and before the torn surfaces become glazed; and, secondly, the early removal of the ligatures, before the occurrence of suppuration. The object of the immediate treatment of these lacerations is to secure, if possible, union by the first intention in the true Hunterian meaning of the term, namely, union by the direct coalescence of the lacerated surfaces; or, failing in this, to obtain union by adhesive inflammation. In either case, it is equally necessary that any blood or dirt that may lie in the wound should be carefully sponged away before the surfaces are placed, as they should be, in perfect apposition. The ligatures should not be drawn tighter than is absolutely necessary to effect this purpose, otherwise they would strangulate the tissues held between them, and probably cut their way out before any union was effected.

Another advantage of immediate operation in such cases is that the parts having been so stretched and pressed upon during labor lose their sensibility to a great extent, and the introduction of the sutures causes comparatively little pain. I have, under these circumstances, stitched up the whole perinæum from the sphincter to the fourchette without the patient showing any consciousness of the operation, in more than one instance.

The interrupted suture was generally employed in these cases; and, unless the laceration extended through the recto-vaginal septum, I have seldom found it necessary to use the quilled, or headed, or hare-lip sutures recommended by some writers. The advantages of the interrupted suture are, first, that, before extensive retraction has taken place, it is sufficient to bring together and hold in apposition the disrupted surfaces, and, secondly, that it may be more generally used under circumstances which would prevent the employment of any of the more complicated sutures already referred to; all that is required for the interrupted suture being a proper needle and some fine wire or ligature thread, and these appliances should be carried in every midwifery case.

The number of sutures to be inserted will depend on the extent of the laceration, and varies from one to six. If the laceration involves the sphincter ani, the first ligature should be introduced through the torn edges of this muscle, thence the stitches should be inserted at intervals of about an inch, until the last is introduced near the fourchette. Care must be taken, however, that they are not carried too far forwards, as occurred in one case that came under my observations in which nearly the entire genital fissure had been thus closed up by an overzealous accoucheur.

It will be seen on referring to the tables that various materials were employed for the sutures in the cases on which I operated. Amongst these may be mentioned silk and hempen thread, steel and iron wire, carbolized ligatures, horse-hair, catgut, and even, as in one case of extensive laceration through the sphincter, where no other material was at hand, common twine was employed with success. But the best material by far for the purpose is fine silver wire. This produces less irritation or danger of sloughing out, and, as I think, more quickly brings about the co-aptation of the lacerated surfaces than any other kind of suture.

The interrupted suture will not suffice, however, to unite, *per se*, the deep portion of an extensive perinæal laceration. And, were we to trust to this alone, we might probably produce a mere superficial union, leaving the patient in a worse condition than before the operation. Hence the necessity, more especially when we do not employ the quilled suture, of carefully pressing together and maintaining the coaptation of the deep portion of the lacerated surfaces by the support of large pads or compresses, so adjusted under a binder as to force the buttocks closely together and take the strain off the suture wires.

The early removal of the sutures is an essential matter in these cases. This should be done as soon as union is effected and before any suppuration takes place. In most cases, I was able to remove the wires in from thirty-six to forty-eight hours after their insertion. And I mainly ascribe the successful result of so large a proportion of my cases to this timely removal of the sutures.

My practice on this point was strenuously opposed by some of the speakers during the discussion in the Edinburgh Obstetrical Society, already referred to. But with all due deference to the opinions of these eminent Scotch obstetricians, I may be permitted to doubt very much that any one of them can show more favorable results in such cases, or can point to a larger practical experience of this kind, than I may do when

I refer to the accompanying tables, which exhibit the causes, treatment, and result of the cases of perinæal and recto-vaginal lacerations on which I have operated.

I may here mention that in the great majority of these cases I saw the patient for the first time shortly *after* the occurrence of the accident, having been sent for only in consequence of it.

The first twenty-one cases in the first table were those on which I founded my previous memoir on this subject; the remaining cases have come under my care since then. Both are faithful records of the unsuccessful as well as of the successful cases, and, I think, fully sustain my views as to the advantages of the timely removal of the stitches.

The frequent failure of the immediate introduction of sutures in cases of laceration, which has thrown so much discredit on this operation, is, I think, mainly due to the fact that the stitches were allowed to remain until they caused suppuration, and thus became loosened. And, with all possible respect for those who relate such cases, I can hardly realize the success claimed by writers who enjoin that the sutures should not be disturbed for six or seven days.

For the purpose of assisting the pads under the nates, already spoken of, in keeping the parts together, a layer of collodion was in some cases brushed over the perinæum after the operation. Generally, however, the collodion occasioned so much smarting, and was so much complained of, that it was found impossible to give it a fair trial. In one or two cases I used the compound tincture of benzoin with the view of protecting the raw surface from the air, and found it of service. In like manner, the solution of gutta-percha in chloroform was unsuccessfully tried. The fact is that in such cases no dressing which causes any increase to the local irritation, or which prevents the free escape of the discharges, should be employed; and, therefore, the best application that can be used is a strip of lint dipped in cold water and frequently changed.

The patient should move as little as possible after the operation, and, with this view, her knees should be well bound together, with a small pad interposed to prevent their stripping from the pressure.

Shortly after the introduction of the sutures, a full opiate should be administered to allay the local pain and soreness, to diminish the constitutional irritation and chance of surgical fever which might set in, and to prevent any action of the bowels.

The diet may in general be so managed as to secure constipation without the administration of any further astringent medicine. No solid animal food should be given till permanent union has taken place, the patient's strength being in the meanwhile well supported by farinaceous food and strong chicken broth in small quantities.

The constipation must be maintained until two or three days after we have ascertained that permanent union has been effected or until all hope of it has been abandoned. The patient as well as the nurse should be clearly informed of the necessity of this constipation, and warned to give notice of any indication of the bowels being about to be disturbed, in order that this may be at once checked. I am induced to dwell so much on this point from the fact that in some most promising cases the cure, which seemed certain, was frustrated by the ignorance or wilfulness of the nurse in giving a purgative before the union had been completed.

In no class of cases is attention to cleanliness more essential than in those now under consideration; so much so that fully as much depends on the care of the nurse in this respect during the after-treatment as on the skill of the surgeon in the operation. Constant care is requisite to prevent the infiltration of the lochia and other discharges between the inner edges of the wound. The vagina should be frequently syringed out each day with tepid water or infusion of camomile. For the same reason the patient should not be allowed to pass water herself, but this should be drawn off by the surgeon with the catheter twice or three times a day.

The following cases may be referred to as affording a more detailed account of the causes and treatment of some instances of the accidents that form the subject of table No. 2:

Cases of Laceration through the Spincter Ani and Recto-Vaginal Septum.

Case I.—M. C., aged twenty-two, was delivered of her first child, a male, after a labor of thirty hours' duration, which was rendered difficult by the great size of the child's head, and necessitating the use of my short forceps. The instrument was removed before the head passed through the vulva, as is my practice in such cases. But, notwithstanding this precaution, the unusual size of the head and the passage of the shoulders caused an extensive laceration extending through the sphincter into the recto-vaginal septum. Immediately after the expulsion of the placenta, I introduced several silver wire points of interrupted suture, and employed the cold-water dressing. The bowels were confined by opium, and, when I removed the stitches on the third day after the operation, the parts were found firmly united.

CASE II.—E. McC., aged twenty-two, a primipara, was delivered of a male child, weighing only seven and a half pounds. She was attended by a French gentleman not accustomed to English midwifery practice, and who did not support the perinæum, and expulsion of the head caused a very extensive laceration of the perinæum, extending through the sphincter ani. I was immediately sent for, and, as soon as the placenta was expelled, introduced four silver wire sutures. The legs were bound together and a full opiate administered. On the third day after their introduction I removed the wires, when the lacerated surfaces were found completely united, and she went out perfectly well.

CASE III.—A. B., a primipara, was delivered of a male child, weighing eight and a half pounds, after a natural labor of sixteen hours. The perinæum was ruptured by the passage of the child's shoulders, the laceration extending through the sphincter. I immediately brought the parts together by three silver wire ligatures, which were removed in fifty hours, leaving the parts completely united by the first intention.

Case IV.—M. S., aged twenty-seven, was delivered of her second child, a male, weighing nine pounds, after a natural labor of ten hours. The perinæum was unusually long, and very rigid, and the child's head being very large and firmly ossified, caused a laceration extending through the sphincter into the rectum. A few minutes after the accident I saw her, and introduced three silk sutures, which failed to produce any union.

Surgical Treatment of old Recto-Vaginal and Perinæal Lacerations.—If the recto-vaginal laceration be of long standing and extend far up through the recto-vaginal septum, the operation to be performed differs from that just described in three particulars: First, the position of the patient; secondly, the denudation of the edges of the rupture; and, thirdly, the suture to be used. In these cases the patient must be placed on a hard mattress, drawn down to the edge of the operating table, and secured in the ordinary lithotomy position, facing a strong light. She should be put under the influence of chloroform if she bears this anæsthetic well, *but not otherwise.* This point should be determined beforehand; as I have seen the operation interrupted, and the patient obliged to be removed from the operating table before its completion, owing to the straining of the abdominal and perinæal muscles, caused by vomiting when the patient was put under chloroform.

The next step is to accomplish the perfect denudation of the mucous membrane from the margins of the lacerated surfaces. To do this, a free incision must be made on either side of the fissure along its full extent, about an inch external to and parallel with the rent, and the mucous membrane must be completely dissected off from without inwards in one piece, so as to leave the opposed sides of the wound perfectly denuded. The raw surfaces must be then sponged with cold water until all oozing has ceased. A strong needle, of sufficient length, set in a wooden handle and bent at right angles with its shaft, having been previously armed with a double ligature of fine silver wire, must now be driven in about an inch externally to the posterior edge of the wound, and, the handle being then depressed, sufficient force used to bring the point out at the corresponding part of the opposite side. The wires should then be cut from the eye of the needle and drawn well through. In this manner three or four deep sutures are to be introduced at short intervals along the line of the wound. For the introduction of these deep sutures the best instrument that can be used is that devised for, and most successfully employed in these cases, as well as in vesico-vaginal fistula operations, by Dr. Denham, the eminent Ex-Master of the Dublin Lying-in Hospital. A piece of metallic bougie should be next laid along one side of the wound, and the ligatures secured to it; and, the thighs having been drawn together, and the buttocks pushed up so as to bring the parts into apposition, the wires may now be pulled tight, and securely fastened to the quill on the opposite side of the wound. The deep sutures having been disposed of, it now only remains to introduce four or five points of interrupted suture along the median line to produce the superficial union of the wound. Immediately after the operation a catheter must be very gently passed, and so secured as to remain in the bladder until union is effected. I need not add that the catheter must be changed twice a day. But on no account should the patient be allowed to pass water, excepting through the catheter, for several days. Cold-water dressing should be applied to the wound, and, as soon as the effect of the chloroform has passed off, a full opiate may be given in a little wine. The deep sutures should not be disturbed for a period varying in different cases from forty-eight to seventy hours, and the superficial ones may be taken out in from thirty-six to fifty hours, or even a little later in some cases. In all other respects, a case should be managed in the way described when speaking of the immediate treatment of such cases.

Recto-vaginal fistula, arising from the imperfect closure of a recto-vaginal laceration, or from a prolonged second stage of labor, giving rise to sloughing of the soft parts, or from the abuse of instruments, are cases of which a few instances have come under my observation. But as this subject does not come within the scope of the present essay, I shall not now attempt to consider it.

TABLE No. 1.

CASES OF LACERATION OF PERINÆUM—THEIR CAUSES, IMMEDIATE TREATMENT, AND RESULTS

Number	Name	Age	Pregnancy	Sex of Child	Lbs. Weight	Cause of Laceration and Part of Child by which Occasioned.	Kind of Sutures Used	Time After Accident Sutures Introduced.	Hours Left in.	Result of Treatment.	Observations.
1	B. K.	23	1st.	M.	8½	Neglect of perinæum, head.	Interrupted, 2 silver wire.	Immediately.	42	Successful.	
2	F. T.	19	1st.	F.	—	Perinæum rigid, forceps.	Interrupted, 2 silver wire.	"	56	Partial success.	Perinæum œdematous, posterior union.
3	M. A. L.	20	3d.	M.	9	Hand to chin.	Interrupted, 1 silver wire.	"	48	Failed.	
4	S. F.	34	1st.	F.	—	Very long perinæum, head.	Interrupted, 3 iron wire.	"	50	Successful.	
5	M. C.	24	1st.	M.	—	Neglect of support, shoulders.	Interrupted, 2 iron wire.	Half an hour.	37	"	Although the bowels moved before sutures were removed.
6	M. K.	18	1st.	M.	7	Rigidity, head.	Interrupted, 1 silver wire.	Immediately.	40	"	
7	A. McD.	20	2d.	M.	—	Rigidity, hand to chin	Interrupted, 2 silk.	One hour.	58	Failed.	Stitches sloughed out.
8	C. B.	26	1st.	F.	8	Neglect of perinæum, head.	Interrupted, 2 silver wire.	Immediately.	48	Successful.	
9	M. B.	22	1st.	F.	—	Neglect of perinæum, hand to chin.	Interrupted, 2 carbolized ligature.	Half an hour.	50	"	
10	E. K.	19	1st.	M.	—	Rigidity, shoulders.	Interrupted, 3 silk ligature.	Two hours.	54	Failed.	Sutures introduced too late.
11	M. W.	36	4th.	F.	—	Precipitate labor.	Interrupted, 1 silver wire.	Half an hour.	36	Successful.	Child born in a cab on way to hospital.

12	A. M.	34	2d.	M.	—	Parts very small, forceps.	Interrupted, 2 catgut.	Immediately.	42	Successful.	Laceration in previous labor, cicatrix ruptured.
13	A. F.	24	1st.	F.	7	Neglect of perinæum, head.	Interrupted, 3 silver wire.	"	48	Partial success.	
14	C. S.	21	1st.	F.	8¼	Neglect of perinæum, forceps.	Interrupted, 3 wire and 1 silk.	"	70	Successful.	Caused by restlessness of patient during extraction with forceps.
15	A. M.	19	1st.	M.	6¾	Neglect of perinæum, head.	Interrupted, 2 iron wire.	"	53	Failed.	Patient suffering from syphilis.
16	C. T.	19	1st.	F.	8¾	Neglect of perinæum, head and shoulders.	Interrupted, 3 iron wire.	"	60	Successful.	
17	J. F. P.	18	1st.	M.	7¾	Neglect of perinæum, head.	Interrupted, 2 silver wire.	Two hours.	56	Failed.	Sutures introduced too late.
18	A. C.	23	1st.	M.	7	Neglect of perinæum, shoulders.	Interrupted, 2 silver wire.	Immediately.	55	Successful.	
19	E. H.	26	1st.	M.	8	Neglect of perinæum, head.	Interrupted, 2 iron wire.	"	60	"	
20	K. M.	27	1st.	F.	—	Rigid perinæum, head	Interrupted, 2 silver wire.	"	45	"	
21	T. L.	19	1st.	F.	—	Neglect of perinæum, shoulders.	Interrupted, 2 catgut.	"	60	"	
22	M. A. C	22	1st.	M.	6¼	Neglect of perinæum, head.	Interrupted, 2 silver wire.	"	53	"	
23	A. N.	40	8th.	F.	7¼	Neglect of perinæum, head.	Interrupted, 2 silver wire.	"	57	"	
24	B. K.	23	1st.	M.	8½	Neglect of perinæum shoulders.	Interrupted, 3 iron wire.	"	55	Partial success.	
25	T. T.	19	1st.	F.	7¼	Neglect of perinæum, shoulders.	Interrupted, 2 silver wire.	"	54	Successful.	
26	I. M.	25	1st.	F.	—	Neglect of perinæum, shoulders.	Interrupted, 3 iron wire.	"	50	"	
27	S. P.	34	1st.	F.	6¾	Neglect of perinæum head.	Interrupted, 3 wire sutures.	"	49	Failed.	

Number	Name	Age	Pregnancy	Sex of Child	Lbs Weight	Cause of Laceration and Part of Child by which Occasioned	Kind of Sutures Used	Time After Accident Sutures Introduced	Hours Left in.	Result of Treatment	Observations
28	M. C.	24	1st	M.	6½	Neglect of perineum, shoulders.	Interrupted, 2 iron wire.	Immediately.	38	Successful	Child born in street.
29	M. B.	30	8th	M.	—	Precipitate labor.	Interrupted, 2 silk.	One hour.	49	"	
30	E. B.	30	1st.	F.	—	Neglect of perineum head.	Interrupted, strong thread.	Half an hour	40	"	
31	A. S.	27	1st	M.	—	Rigidity, hand to chin.	Interrupted, silver wire.	Three hours.	82	Failed.	Sutures introduced too late and left in too long.
32	M. A. S.	20	1st.	F.	—	Rigidity and neglect, head.	Interrupted, 3 iron wire.	One hour.	56	Partial union.	Head pressing four hours, not seen till then.

TABLE No. 2.

RECENT LACERATIONS OF SPHINCTER ANI AND RECTO-VAGINAL SEPTUM—THEIR CAUSES, TREATMENT, AND RESULTS.

Number of Case.	Patient's Name.	Age.	Pregnancy.	Sex of Child.	Cause of Laceration and Part of Child by which Produced.	Extent of the Laceration.	Time of Treatment After the Accident.	Kind of Sutures made Use of.	Hours Left In.	Result of the Treatment.	Observations.
1	T. P.	24	1st.	M.	Restlessness of patient under chloroform during extraction of head with forceps.	Recto-vaginal septum	Immediately.	Interrupted, with a common twine.	50	Complete union of recto-vaginal septum and sphincter, but not of perinæum.	
2	T. B.	28	1st.	M.	Neglect of supporting perinæum, rupture caused by shoulders.	Sphincter ani.	One hour after.	Interrupted, with silver wire.	36	Successful as to the sphincter, but no union of the perinæum.	
3	B. K.	21	1st.	M.	Precipitate labor, laceration caused by head.	Sphincter.	Immediately.	Interrupted, with steel wire.	46	Failed.	
4	A. M.	23	1st.	M.	Parts very small, perinæum rigid, head	Sphincter.	Immediately.	Interrupted, silk.	52	Successful.	

Number of Case	Patient's Name	Age	Pregnancy	Sex of Child	Cause of Laceration and Part of Child by which Produced.	Extent of the Laceration.	Time of Treatment After the Accident.	Kind of Sutures made Use of.	Hours Left In	Result of the Treatment	Observations.
5	K. A.	25	1st.	F.	Rigidity of perinæum, head.	Recto - vaginal septum	Half an hour.	Deep quilled sutures and superficial interrupted, silver wire.	50	Partial success, union posteriorly.	
6	A. L.	23	2d.	F.	Very large child, perinæum neglected by the nurse.	Sphincter.	Immediately.	Interrupted sutures, with strong ligature thread.	49	Successful.	
7	C. P.	35	1st	M.	Perinæum rigid, labor delayed by this patient, attended by an ignorant nurse.	Recto - vaginal septum	Two hours after.	Quilled sutures, with iron wire.	60	Failed.	Patient very poor, attended at home, and badly cared
8	C. McC.	22	1st.	M.	Perinæum not supported.	Sphincter ani.	Immediately.	Interrupted, with silver wire.	57	Successful.	
9	M. C.	22	1st	M.	Forceps case, laceration caused by unusual size of child.	Sphincter ani.	Immediately	Interrupted, with silver wire.	60	Successful.	
10	A. B.	—	1st.	M.	Neglect of perinæum, shoulders.	Sphincter ani.	Immediately.	Interrupted, with silver wire.	50	Successful.	
11	M. S.	27	1st.	M.	Rigidity of perinæum unusual size of child's head.	Recto - vaginal septum	Immediately.	Interrupted sutures with silk.	56	Failed.	

ON CATARRH OF THE UTERUS.*

BY CARL HENNIG, M.D.,

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I. CATARRH OF THE NON-PREGNANT UTERUS.

A.—PRIOR TO THE MENSTRUAL EPOCHS.

Pathological Anatomy: (a.) *In children.*—Catarrh affects the uterus more frequently than the fallopian tubes, and occurs as frequently before the seventh year as afterwards. Before the seventh year, it generally only affects the cavity of the body, and, as a rule in children, never the cervical canal independently, but always the cavity of uterus and cervix simultaneously; then, also, as a rule, the vaginal mucous membrane participates in the catarrh. Only in one of my cases was the peritoneal covering of the catarrhal uterus thickened, in one other the muscular tissue of the anterior uterine wall was hyperæmic, and in a third pale. In general, it was proved by my examinations (differing from the assertion of Aran) that catarrhal affection of the mucous membrane does not in the majority of cases cause hyperæmia or inflammation of the uterine muscular tissue, nor should it be considered a result of the latter.

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* From his work, "Der Katarrh der Inneren Weiblichen Geschlechtstheile." Leipzig. 1870. Chap. iii. part ii. Translated by John C. Jay, Jr., M.D., New York.

The mucous membrane in this disease has more rugæ than is seen in the healthy uterus during childhood; is not thickened, is of a yellowish or pale orange color, while here and there it is very pale, grayish, and very seldom injected (at least in the cadaver). Acute catarrh I have seen once in a little girl of nine months. The mucous membrane had many folds, was covered with an abundant, perfectly transparent, slightly acid mucous of the consistency of the white of an egg. This mucous became cloudy upon the addition of diluted acetic acid, and contained, excepting a few pale granular cells, no elements.

In chronic catarrh it is difficult to recognize the tubular glands of the mucous membrane. After the addition of acetic acid, in their interior can be seen pale, round, or obtuse, irregularly arranged, single nucleated cells. The mucous has a faintly acid or slightly alkaline reaction, is transparent, slightly grayish, mucilaginous, and rarely limpid. Under the microscope, within it can be seen numerous cylindrical cells, oftentimes longitudinally striated, and also a large amount of free hyaline. I never observed any ciliated epithelium, and only rarely blood corpuscles and pigment. Granular cells also are only occasionally met with.

(b.) *In adults.*—Uterine catarrh occurs strikingly seldom during the middle of life, but frequently toward the menopause. We find that its occurrence in the cervical canal is very evenly distributed through the dif-

-ferent periods of adult life, and that generally catarrh of the cavity of the body of the uterus occurs independently of catarrh of the cervix. Only in old age do the two affections seem to run parallel.

The uterine muscular tissue in catarrh is frequently softer, oftentimes hyperæmic, rarely injected or œdematous, and is in one-ninth of the cases pale and grayish-yellow. The post-mortem thickness and roughnesses of the peritoneal covering are often due to some other cause than the catarrh.

In acute catarrh the mucous membrane is a little swollen, and in young women greatly injected; in more advanced life it is pale. The cavity of the uterus is moderately enlarged, and contains as much as one scruple of glary, not very viscid, slightly yellowish mucus, having a slightly acid reaction, and in old women a strongly alkaline reaction. In it is seen here and there ciliated epithelium.

In chronic catarrh, the mucous membrane is perceptibly thickened only in old women, though occasionally even in young persons it is strongly pigmented, softened, roughened, and pitted, and quite often highly injected. In old women it is sometimes apoplectically hæmorrhagic, a condition I have only seen in cholera corpses.

In others, especially after long-continued or oft-repeated catarrhal disturbance, the mucous membrane has a mottled grayish green or brownish red (inflammatory) appearance, or is exceedingly pale, with here and there networks of little vessels. Only in old women are the swollen mucous follicles appreciable to the naked eye; they are then lined with cells in a state of fatty or colloid degeneration. In younger women I found only the epithelium swollen and becoming hyaloid, surrounded by granular matter, and only in one woman of fifty-four years were the central cells fatty. In the latter case catarrh was not present.

In old age, cystic degenerated uterine follicles are seldom absent; they originate through a closure of their orifices, whereupon an accumulation of their contents takes place, and the fundus of the gland, therefore, distends into a sack. Accompanying this condition there is always an excess of mucous upon the free surface of the mucous membrane, while here and there can be seen tufts or glandular polypi.

The epithelium comes off easily in shreds. Ciliated epithelium are sometimes, even in old age, present in abundance. The cylindrical epithelium generally predominates.

Granular cells are present in abundance; free fat almost only in old persons; cholesterine I saw a few times.

There is much intracellular hyaline, and a few colloid globules. Blood corpuscles were in several cases very freely intermingled, and in one case only in a stellate contracted condition; less often I have found precipitated hæmatine.

The mucus secreted is generally whitish-gray, or reddish-gray, and either clear or clouded. In one case, I found it thin and fluid; in another, of the consistence of syrup; and, chiefly in those advanced in years, viscid. It is generally alkaline, although a variability from slight acidity to strong alkalinity has been noticed. The quantity found in the cavity may be as large as one drachm.

Symptoms.—Acute catarrh is, without exception, accompanied by dragging sensations in the lumbar and pubic region, which may radiate to the bladder and rectum. There is also often the feeling of a weight or pressure in the pelvis. The patient experiences similar pains when a chronic catarrh becomes exacerbated. The temperature of the body is always slightly, seldom much, increased; the pulse and respiration are quickened. The sleep is disturbed by frequent desires to urinate, and small, thin evacuations of the bowels, accompanied with rectal cramp, disturb especially the early hours of the morning. Most patients complain of slight chilly feelings, which alternate with flushes of heat. They speak quickly, are excitable or quick-tempered, and are inclined to be mournful. Some have headache, which is at first increased by their lying down, and they complain of megrim. They complain more of thirst than hunger, are often troubled with nausea, or pains in the stomach. They often declare that their abdomen is swollen, and cannot endure the bands of their clothes. In others, the lower portion of the abdomen is swollen, and at its centre (region of the uterus), or at the sides (region of the broad ligaments), is painful when pressure is made upon it. The skin is, as a rule, dry, and especially does the patient complain of a nocturnal burning of the soles of the feet; a few, also, of cold feet.

With severe lumbar pains, the sufferers frequently experience a discharge of clear mucus from the vulva; some have a discharge of bloody serum or of pure blood (*metritis hæmorrhagica*). This discharge is seldom much in quantity, and lasts only a few days.

In chronic catarrh, the discharge is generally more considerable, but the local disturbances less. The fever is very slight. The gradual decline in strength is more marked; the face, previously of a good color, becomes pale, sallow, with dark rings around the eyes, and has the expression of pain. The patient grows thin, the menses are irregular, and constipation is often complained of.

Before puberty, catarrh of the body of the uterus, as far as I know, causes no annoyance.

B.—IN CONNECTION WITH MENSTRUATION.

Pathological Anatomy.—The uterus is swollen and congested, its mucus membrane twice or three times thicker than normal, and on one wall sometimes thicker than upon the opposite one; its surface is covered over with slimy, partly coagulated blood. In rare cases, a large portion of the exuberant mucous membrane has been thrown off.

Symptoms.—Towards the end of the menstrual period, the beginning of which was ushered in by pains in the region of the uterus, and by an abundant discharge of mucus, clots of blood, together with shreds of mucous membrane, or a complete cast of the uterine cavity, are discharged, accompanied with bearing-down pains (*membranous dysmenorrhœa.*)

II. CATARRH OF THE PREGNANT UTERUS.

Catarrh of the gravid uterus is of very rare occurrence, and an affection seen but by a few, for the reason that pregnancy is not favorable to the existence of catarrh of the uterine cavity, that its secretion is never discharged so as to be seen, and that *post-mortems* on pregnant women are not frequently available. I only know of one recorded case, and only in three cases have I myself been able to make examinations.

During the later period of pregnancy in many women, there flows from the vagina, in considerable quantity, a serous fluid, which, the speculum shows us, comes from the os uteri. The time of commencement and the manner of this flow are as variable as are its duration and its quantity. It comes on, for the most part, in the last week of pregnancy, less often in the last months. Krause,* from whom I borrow this assertion, adds: "Never before the seventh month." My case speaks for the possibility of a still earlier occurrence.

HYDRORRHŒA OF THE GRAVID UTERUS.

While the woman is standing or walking, and even occasionally when she is lying quietly in bed, there occurs suddenly a discharge of fluid, without there having been any preceding pain. Only after a very abundant flow does there sometimes occur a pain somewhat like labor, just as if the uterus, having discharged some superfluous matter, contracts and closes intimately upon the embryo. Generally, this, after a short interval, recurs in a less violent degree, and continues to recur until labor begins; occasionally, after having been repeated a few times, it ceases, or a very slight discharge continues. The discharge is at first clear or yellowish; later, mixed with blood, and has an animal smell. In the case of a strong, healthy primipara, I collected, in the course of the fortnight preceding delivery, about four pounds of fluid.

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* A. Krause, "Die Theorie und Praxis der Geburtshülfe." Berlin, 1853. II. Theil. S. 7.

The opinion that this discharge is the remnant of the hydroperion which is present during the first month of fœtal development, and which, having collected between the amnion and the vascular covering, is discharged through a rent in the chorion, is less probable than the hypothesis of Jörg, according to which this "false water," which, in many cases, is discharged a short time before parturition, originates from the allantois, which still exists as a cavity. The allantois, lying in the same space as the hydroperion, and continuing to exist as a bladder, gives rise to the fact that after birth the fœtal membranes seem, in the one case, a little, in another case much more, separated the one from the other.

Other and later authors, resting upon a few facts, have sought to deny *in toto* the occurrence of uterine hydrorrhœa. Ingleby, in 1832, reported a case of hydrorrhœa in which there was found a small opening in the fœtal membrane, close to the edge of the placenta, and totally unconnected with the large rent through which the fœtus had been born. Dubois observed a similar case. Danyan found the same. On the 12th of December, 1860, a woman was confined in the Maternité. She had during the five weeks preceding labor lost water almost continuously. Danyan discovered almost exactly opposite to the rent in the fœtal membranes a round opening three lines in diameter.

This condition, however, does not exclude the fact that the uterus, either when in its most congested state, and the decidua, when enduring so high a vascular pressure, do under favorable circumstances discharge on the exterior of the vascular membrane a portion of the serum serving the purpose of amniotic fluid; or become catarrhally affected, as Rhazes first demonstrated.

I learn with much satisfaction that A. Krause embraces my opinion. Suppose that the true fœtal water does originate for the most part from the deciduous membrane, the secretion of which, passing through the two fœtal tunics, arrives in the fœtal cavity; suppose, further, that the decidua induced by some cause, be it what it may, should quickly produce a greater quantity of water than the fœtal cavity is capable of containing, or that the decidua has at any point become separated from the chorion, then will the secretion, instead of passing through the fœtal coverings, be forced to accumulate between the vascular membrane and the deciduous membranes. The accumulating transudation follows the laws of gravity, and separates the union of the decidua and the chorion downwards until it reaches the os uteri, and is discharged in a gush. After the discharge, the passage is closed, whereupon the secretion accumulates at the original secreting point, until it again makes a way for itself outward. If, on the other hand, the passage remains open, or if the secreting point is situated quite near to the os internum, then the discharge does not occur in sudden gushes, but by drops. The occurrence of such an accumulation of the fœtal fluid, destined for the fœtal cavity, between the uterus and the fruit, is also favored by the fact that, if exhaustion be present, this transudation decreases, whereas where there is extraordinary energy there more is produced than is necessary. In this category belong also the cases* in which œdema of the uterus was the source of the hydrorrhœa. To refer them always, however, to uterine œdema (Hohl) would be wrong.

With Krause, I consider it not impossible that this fluid is occasionally the product of the mucous membrane in the course of development beneath the decidua, from which mucous membrane the old decidua separates itself the more as the end of pregnancy approaches, consequently in such cases the transudation is serous mucus. Rigby was of the same opinion.

C. Braun was the first who examined microscopically the locality of the increased transudation. He found the region of the decidua scrotina, hence the external superior surface of the placenta covered with a new growth rich in cells, which caused him to deduce the existence of inflammatory irritation. The increased exosmosis is further spoken of by J. Harrison.* He found in every case a fibrous band at the border of the placenta, and refers the water accumulation to the space between the fœtal membranes. C. Braun gives further confirmation when he asserted that chronic uterine catarrh is not relieved by pregnancy, and also P. Dubois and Chailly, who found in some women the hydrorrhœa still continuing after parturition.

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* L. F. Wokaz, "Diss. Exhibens Graviditatis et Hydropis Uteri, Ambiguæ Exempla." Lips., 1813.—J. B. Geil (præs. F. C. Naegele), "Diss. de Hydrorrh. Uteri Gravidarum." Heidelb. 1822.—Paffermann, Lips. 1835.

CASE I.—From my private practice. Mrs. E., in Leipsic, 32 years old, was delivered of her first child by means of the forceps. This otherwise healthy woman was attacked repeatedly with intermittent fever, which was here endemic, and bore in pretty rapid succession three more children; was, however, during the last pregnancy considerably œdematous. The vaginal portion of the uterus was also a good deal tumefied.

On the 31st of July, 1859, her menstruation ceased. During the end of December occurred a mucous discharge from the genitals. In the course of the following days blood was added to the mucus. Without any further cause, hydrorrhœa occurred on the 7th of January, 1860, at 7½ P.M. The discharge was also streaked with blood. At 9¾ P.M., of the same evening the midwife removed from the vagina the fœtal mass, the membranes being unbroken. Attached to the placenta was a club-shaped fleshy mass; its exterior consisted of young cells, its interior of crude blood coagula. The chorion was raised up as much as three millimetres by the exudation from the internal surface of placenta. At some points the placenta was paler and harder to the touch. At other points were embedded fresh apoplexies arising on the uterine side of the placenta.*

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* *British Medical Journal*, June 27, 1857.

After the puerperal state the woman suffered repeatedly from leucorrhœa, accompanied with an enlarged uterus, which was tender to the touch, and occasionally visited with drawing pains.

In July, 1860, she again conceived. On the 9th of November she had chilly feelings along the back; in the evening, about nine o'clock, occurred all of a sudden a flow of waters, after that for a long time only thin mucous. On the 8th of December she bore a healthy female child, which she nursed for three weeks. Six weeks after her confinement menstruation returned.

CASE II.—Under the care of Professor Credé. A public woman of delicate build, twenty-three years old, was treated here in the hospital until the end of November, 1861, for a syphilitic ulcer of the vulva, and was transferred to the Trier's Institute on account of premature labor in the eighth month coming on. The patient in the few previous days had lost a great deal of clear water, which later became more scanty and bloody. The child was born alive. On the afterbirth were seen the membranes, which had only one large rent, but they were discolored, especially on the placenta; the umbilical vesicle, half an inch from the edge of the placenta, was shrivelled up between the membranes. On the other side of the decidua, which was drawn together into a thick ridge prominent upon the edge of the placenta, a gelatinous mass ran round the third part of the circumference upon the external edge of the placenta about three lines broad, two lines thick, of a dull yellowish-gray, here and there colored with blood, which could easily be separated in the direction of its long fibres, but could not very easily be torn transversely. This mass showed under the microscope spotted striæ and fusiform bands. With both these kinds of plasma membrane were associated cells, the more prominent of which contained each an elongated, umbilicated nucleus; at one point there were numerous, round, very delicate cells, having a diameter of 0·0057 to 0·0133 millimetres, with hyaline contents, and each having from one to three nuclei with distinct outlines, which, upon the addition of acetic acid, became still more distinct, while the plasma membranes cleared up until they disappeared. The nuclei, which in many cases were in the act of dividing, had diameters of 0·0044 to 0·009 millimetres, and contained each 1 to 2 nucleoli. I looked upon these cells as the source of hydrometra.

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* C. Hennig, "Ueber die Nebenbänder und Schafhautstränge in der Eihöle des Menschen, *Archiv für Pathol. Anat.*, Bd. xix. Hft. 1. S. 200.

CASE III.—From the clinic of Professor Germann. Mrs. Gressler, of Weimar, forty-three years old, had had very painful menstruations, had had eleven children, four miscarriages, the last in September of the previous year. During the present pregnancy, which had already reached the end of the seventh month, she experienced constant pain in the lumbar region, had no appetite, and the stools were hard and infrequent. In the beginning and middle of October she had considerable watery discharges from the vulva.

Not only in this case, but also in another case of Germann's obstetrical clinique, did hydrorrhœa occur before the seventh lunar month. On the 24th of November labor-like pains occurred, and likewise symptoms of metro-peritonitis. Dover's powder and warm poultices to the abdomen were ordered. Death occurred on the evening of the 27th. During life hard lumps could be felt posterior to vaginal portion of the uterus, extending as far up as the promontory. They proved to be cancerous lymph ganglia. The uterus presented to the naked eye only upon its posterior surface yellowish-white medullary-cancerous masses, here and there covered by fibrinous exudation. They extended from the ligamenta ovarii outward along the oviducts, which otherwise were not strikingly affected, upon the peritoneum uteri. While the cavity of the fœtal membranes contained greenish-brown, turbulent, amniotic fluid, there was found, in the space between the chorion and the decidua, which latter was completely separated from the former, about a tablespoonful of bloody serum, the remainder having flowed away during the discharge.

In this transudation were found, besides blood-corpuscles, which had partially lost their color, cylindrical epithelium, which were 0·076 to 0·095 millimetres long, 0·01 to 0·015 millimetres broad, with 1 to 2 round or oval large nuclei. More abundant were round, or elongated, or fusiform cells, having from 1 to 8 large nuclei; some of them changing into hyaline. These cells also, according to the assertion of E. Wagner, to whom I showed the specimen, were not distinguishable from cancer cells. There were also present large round or egg-shaped bodies without nuclei, and in which no nuclei could be made manifest upon the addition of acetic acid. And, finally, there were long, flat fibres, many of them fusiform, evanescent upon the addition of acetic acid. The decidua was composed of fibres, like those first described, which were plentifully permeated by pearly, flat globules, arranged side by side in rows; and of large, nucleated, irregular, and many-tailed cells, whose nuclei were blood-stained. They resembled in shape granular cells and flat epithelium.

III. CATARRH OF THE PUERPERAL UTERUS.

During the puerperal state, catarrh of the uterine cavity is rare. On many occasions, and, in particular, in institutions where putrefying animal matters are present, and communicated to the pregnant and lying-in women by those present administering obstetrical aid- even when cleanliness of the vagina has been neglected—it becomes developed in a surprising rapidity and frequency, and is communicable as well by contact as by means of the atmosphere.

Thus uterine catarrh is, then, the common cause and true seed of puerperal fever. Instead of the bloody lochia, there is secreted, for several days, almost nothing, or an almost colorless fluid, and then only, with the increasing endometritis, is occasionally bloody or ichorous matter discharged.

Complications of Catarrh of the Cavity of the Body of the Uterus.—The lengthening of the uterine cavity depends more upon the accompanying hypertrophy of the organ than upon a dilatation of the cavity, which, except in cases of hydrometra, with occlusion of the os, can never, on account of the dependent position of the canal, obtain to any extent. West found, in an inflamed and flaccid uterus, over one drachm of pus. Whether catarrh of the cavity can cause a considerable hypertrophy is, on account of the difficulty of the diagnosis during life, still uncertain. We find ourselves here, in many respects, in the same embarrassment as when speaking of the concomitant phenomena of tubal catarrh; and I have, through tedious researches, hardly advanced further than Ch. West,* when he says: "Our means of examining the condition of the womb are very imperfect, compared with those that we possess for investigating the state of other organs; and hence the question often arises, whether the signs of disease which we discover are the cause of the symptoms, or whether they are the index of other and more important changes, or whether they are neither the one nor the other, but mere casual concomitants of graver ailments, concerning whose nature and degree we can, from them, deduce no conclusion."

ETIOLOGY.

In the case of the uterus we can more directly conclude whether, and in what way, its mucous membrane is affected by irritants, because it is more openly situated to the outer world, and is more frequently primarily diseased than the oviducts.

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* Ch. West, "Lectures on the Diseases of Women." Lond., 1856. Part I. page 99.

I. *Idiopathic Catarrh.*—Mechanical injuries comparatively seldom affect the non-pregnant uterus, on account of its small size, but as the result of severe injuries, there occurs more frequently hyperæmia, hæmorrhage, or inflammation of the serous covering, together with secondary catarrh, than primary and simple catarrh. Still, there are several cases to be found in literature in which mechanical injuries have been followed by primary catarrh. Severe shocks, either physical or mental, are especially injurious during the child-bearing period. If there be therewith great or long-continued excitement of the circulation, as in immoderate dancing, wine-drinking, anger, then there is sufficient cause for the production of uterine leucorrhœa.

Aran told me personally that in Paris he had come to the conclusion that uterine catarrh arises in the rich classes from emotional excitements, especially depressing influences, but, in the poor classes of the population, from tuberculosis of the lungs. I can in this place, as far as my experience goes, confirm this assertion. Violent coition is more injurious than too frequent; often still more so is an unnatural and unsatisfied excitement. Incongruity between the genitals of husband and wife, and the resulting unhappy wedlock, may possibly outrank the previously cited cause.

Physico-Chemical and Atmospherical Irritants.—Too cold, too frequently repeated, and too strong injections more often cause uterine catarrh than does the unskilled sounding of the uterine cavity, as the latter causes rather wounds, hæmorrhages, or uterine pain—neuralgia or cramp. Not unfrequently styptic agents which have been used to check uterine hæmorrhage act as additional irritants. Too warm clothing, too soft a bed. sitting over furnaces, are in part directly, in part through the effeminateness which they cause, injurious, inasmuch as the liability of catching cold is thereby increased. Too sudden changes of temperature are, to susceptible persons, the more injurious in proportion to the highly-excited condition of the uterus, and in proportion to the proximity of the cold-causing or heat-abstracting object to that organ: as sitting upon a cold stone after a fatiguing walk, standing in the moist grass, in a cellar, the going barefoot of such persons as are not used to it. Many women who otherwise dress themselves very judiciously have the unreasonable habit of going out in rainy and snowy weather in the thinnest of shoes and stockings; others have the still more pernicious habit, when bathing in a river or the sea, of going slowly into the water, instead of either first pouring cold water over themselves, or, at least, of bathing the upper portion of the body, and then immediately diving into or running quickly into the water.

Of poisons, the ethereal oils, the strongly bitter and balsamic agents (sabina, turpentine oil, cantharidin, lupulin, copaiba), alkalies, acids, and several neutral salts, have long been in ill-repute. It is well known that some of them—nicotianin,* sulphuric acid,† have been detected in the secretion of the endometrion; of others, it is supposed, and upon good ground, and deduced from the collected experiences in the case of the urinary organs and the rectum, that they act as irritants to that mucous membrane through which they are excreted from the blood.* Daily observation shows that others change the character of uterine discharges (cubebin), sometimes curatively, or intensify acute discharges and aggravate chronic ones (sulphates of the alkalies, iodide of potassium, muriate of ammonia).

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* Mélier, *Bull. de l'Acad. de Méd.*, x. p. 585; and Wertheim, *Zeitschrift der Ges. der Aerze zu Wien*, Jan. 1851.

† *Med. Gazette*, May, 1828.

During pregnancy, infection with blennorrhœal secretion, as a result of connection, may act injuriously; in childbed, the remaining behind of a portion of the placenta or of the membrane, and the endeavors to remove these, as also the operations which, during parturition, may have become necessary, tilting over of the uterus, the poison of a cadaver, or of a disease which may be introduced by the finger of the examiner, exposure to cold, mental emotions, badly-ventilated rooms, damp atmosphere, and drastic medicines.

II. *Catarrhus Deuteropathicus.*—1. *Symptomatic.* (*a.*) Flexures and curvatures of the uterus are decidedly more injurious than do changes in its position, for by changes in its form there is caused a more or less stasis in the blood and lymph-vessels, and, in an aggravated case, the excretion will be retained in the uterine cavity.

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* C. Hennig, "Chemische und pharmakologische Prüfung des Gummi Kino," *Archiv. der Pharmacie*, cxxiii., Bd. 2, S. 158; und *Arch. für Physiol. Heilkunde*, xii., S. 612.

Among my 28 cases of catarrh of the uterine cavity were three cases of flexure, and once the body of the uterus was swollen so as to be a case of hydrometra.

(*b.*) The uterine cavity I found reduced in size several times through hypertrophy of the connective tissne and of the muscular layer, once through an adhesion of the opposite mucous surfaces in the right horn of the uterus, once through a submucous fibroid; in old persons, often through ecchymoses, cysts, polypi, and tufts. Concerning the constrictions and occlusions of the internal os we shall speak more particularly later.* At present we will merely state that in three cases dropsy of the uterine cavity was found.

2. *Sympathetic.* It is perfectly obvious, from the greater frequency of tubal catarrh over catarrh of the uterine cavity, that tubal catarrh is more often produced by uterine catarrh than is uterine catarrh by leucorrhœa tubaria; as an anatomical proof, we mention the difficulty with which viscid mucous passes through the oviducts into the uterus through that very narrow portion of the tube which is situated in the substance of the uterus. Furthermore, it must be borne in mind, in accordance with the hydraulic proof given on page 12, that the cause of irritation for the mucous membrane is more surely transmitted from tissue to tissue than through the medium of a mucous vehicle.

3. Catarrh is a result of congestions and hyperplasmas (muscular hypertrophy, fatty degeneration), and

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* Compare " E. Wagner, der Gebärmutterkrebs." Leipzig, 1858. S. 44.

of heterologous affections of the uterus, whether it be cancer, tubercle, cystosarcoma, or a dermoid tumor.

While I admit that gonorrhœal catarrh of the uterus frequently produces a mucous secretion in the oviducts, yet I venture to doubt that that tubal mucous secretion is infectious; otherwise it would, by its very pertinacity, through the continual current uterineward kept up by the ciliary movement, re-excite gonorrhœal catarrh in the already cured uterus. The analogy is also wanting in the case of men patients. How very often there remains, after the disappearance of the urethral gonorrhœa, a swollen condition of the prostate gland, catarrh of the bladder, or a tendency to inflammation of the epididymis, without there being caused, through a renewing of the inflammation in the last-mentioned part, or even through a rekindling of a mucous discharge from the bladder, a second renewal of the affection in the urethra.

As regards gonorrhœa of the uterus, it is in any given case difficult to say whether it is primary, that is, caused by immediate reception of the blennorrhagic mucous from the urethra of the male, or has occurred secondarily, that is, communicated from the vagina to the cervix uteri and so on further up. It is also supposable that frequently simple catarrh of the uterus or phlegmorrhœa of the vaginal portion accompanies vaginal gonorrhœa.

Inflammation and foreign growths of the tubes, of the ovaries, or of the uterine ligaments (peritonitis), frequently also cystitis, are accompanied by a uterine mucous discharge. Still more intense than those are the effects in individual cases of peritonitis and severe intestinal catarrh, cholera, and enteritis together with diarrhœa. Here may be mentioned also the pelvic abscesses so frequent as compared to the very seldom occurring abscesses of the uterine substance, and whose precursor and companion uterine catarrh may be.

Uterine catarrh occurs secondarily from rigidity and occlusion of the uterine arteries, from capillary embolus, and from dilatation of the veins; the latter frequently the result of overdistension and relaxation of the veins of the pelvis in general and of the hæmorrhoidal veins in particular. The walls of the veins are thereby rendered thin, their power of contraction diminished, and they are occasionally in a state of fatty degeneration. This condition is produced by an improper use of burnt coffee, in a less degree of tea, by an excessive use of sleep-inducing drinks and warm soups, by long-continued constipation of the bowels or by the misuse of powerful cathartics, or follows as a result of frequent and difficult labors. It often leads to thrombosis of the hypogastric and uterine veins. According to my experience, such conditions are also caused by abnormal depositions of fat in the peri-uterine cellular tissue. They also accompany unalterably most cases of heart disease, severe cases of emphysema, tuberculosis, frequently, also, Bright's disease, and serious diseases of the liver and spleen. Consumption is also the cause of uterine catarrh in those cases in which the pressure of the blood in the pelvic vessels is increased; it is, nevertheless, worthy of notice that tubal catarrh is more often found in connection with tuberculosis of the lungs than is uterine catarrh. To what extent the scrofulous diathesis favors the occurrence of uterine catarrh, I am not in a position to say.

I am firmly convinced that chlorosis, hydræmia, typhus, and the acute exanthemata, give rise to and maintain it.

During childbed, uterine catarrh is so rare that in the lying-in asylums of this city I have never seen it, except during puerperal fever. Among the poorer classes, where the mother often rises upon the first or second day after parturition and scrubs her room and makes her coffee, it occasionally occurs. Puerperal tubal catarrh forms to this a striking contrast, although it is also comparatively rare.

CONSEQUENCES AND RESULTS.

I am authorized in the opinion that uterine catarrh gets well easier than tubal catarrh. Thickening, roughness, and inflammation of the peritonæum of the uterus occur often enough simultaneously with catarrh of its cavity, or with traces of it, not to excite attention. Granted that catarrh is often a result of metroperitonitis, we have still, also, cases of old catarrh and recent peritonitis, and besides that the fact that primary inflammation of a serous membrane is rare, especially in the case of the peritonæum. Now, we meet with in the catarrhal uterus only occasionally hyperæmia or inflammation of the parenchyma; therefore the peritoneal irritation originates from either an acute catarrhal inflammation which has been associated with uterine hyperæmia, or from an irritation of the mucous membrane, which was simultaneous with a physiological uterine hyperæmia, namely, menstruation or pregnancy.

And, in fact, there are complained of, especially at the time menstruation begins or is about to occur, and likewise frequently in the first part of the last months of pregnancy, pains which point to a stretching of the inflamed serous covering combined with meteorism and constipation, and to a rupturing of the already formed adhesions and bands, as we almost daily in leucorrhœal women can conceive of, even feel and after their death find. Too often these dragging pains are considered labor pains or nervous colics.

And should this mode of propagation of the irritation be the exceptional one, there is no difficulty in coinciding with the belief of celebrated authorities, that catarrhal excitement in the uterine cavity is followed by corresponding participation on the part of the tube, and its fimbriated extremity is the point in the human body where mucous membrane and serous membrane, without anything intervening, border the one upon the other. This so dangerous approximation only occurs on one other occasion, namely, at the time when the ruptured Graäfian follicle of the ovary has not yet closed again.

The oviducts suffer, therefore, most severely when the catarrhally swollen or even irritated mucous membrane of the uterus closes up their uterine openings. In this connection may be considered

DROPSY OF THE UTERINE CAVITY (ACCORDING TO RHAZES).

It is relative in its character when the internal os is only occasionally constricted, or is occluded in such a manner that under favorable circumstances it again becomes pervious, as, for instance, through spasm of its circular fibres, through acute swelling, or a casual forelying polypus of the mucous membrane, or through flexure. Otherwise it is absolute. Only in one of these three cases was the right tube impassable; therefore the contents of the uterine body could have discharged itself through the left tube, if this procedure were so easy of accomplishment; in the other cases the interstitial portions of the tubal canals at least were constricted.

In two cases the contents of the hydrometra had a slightly acid reaction; in one it was gelatinous and transparent, in the other serous and opaque. In the third case the very abundant mucous was alkaline, and contained great numbers of epithelium from the glands and cells from the surface of the mucous membrane.

The uterus is more often hypertrophied than by pressure of the fluid atrophied. We shall see later that highly developed Nabothian bodies in the cervical canal also obstruct the discharge of the uterine mucus.

The muscular tissue of the uterus from oft-repeated hyperæmia and from serous infiltration, both of which conditions in a more or less degree attend catarrh, becomes softer and weaker, or from repeated endeavors to rid itself of the contents of the cavity of the body, hypertrophied. A mixed condition is brought about by hyperplasia of the connective tissue, which is known as "chronic infarction."

The mucous membrane during chronic catarrh undergoes very appreciable changes. It becomes permeated by varicose vessels, and scattered through it are ecchymoses and deposits of pigment; it loses its ciliated epithelium, or the ciliæ do not move regularly. The tubular glands become producers of fat and hyaline instead of healthy epithelium, and finally many of them, their emunctories being oculated, become changed into cysts, several of which, the one alongside of the other, may form into a common cone which may become detached. They may form "cellular" or "vesicular" polypi with broad or pediculated basis.

In all cases, the general health of the patient suffers; the frequent pains and discharges, but especially the sleepless nights and fatty digestion, reduce even the stronger patients.

A CONTRIBUTION TO THE SUBJECT OF THE ENUCLEATION OF UTERINE FIBROIDS.

By T. GAILLARD THOMAS, M.D., of New York.

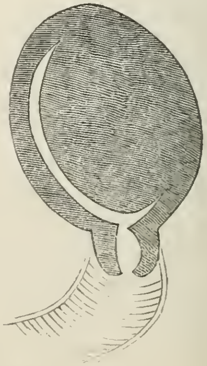
Read before the New York Obstetrical Society, May, 1872.

There are few pathological conditions which create in the mind of the gynæcologist greater anxiety and doubt, and call for more consummate caution and skill, than submucous sessile fibroids situated within the cavity of the body of the uterus. On the one hand, he watches with anxiety the slow but steady wasting by haemorrhage which day by day brings his patient nearer and nearer to the grave, and sees all palliative means prove futile in checking the fatal process. On the other, he dreads to resort to a surgical procedure, which, while it holds out a bright prospect of success, is attended by dangers which often serve to shorten the life which he is striving to prolong.

It appears to me that for clinical purposes all sub-mucous fibroids may be profitably divided into three classes: first, that class which is most easily dealt with, in which the tumor hangs in the vagina or rests upon the os externum, the os internum being dilated; second, that presenting much greater difficulties, but which is still quite amenable to treatment, in which the tumor is imprisoned by the undilated os internum, but is connected with the uterus by a pedicle or stem; and third, that which presents the gravest features, whether we temporize or attempt removal, in which the growth has no pedicle, but springs as a sessile development from the walls of the uterus.

It is with the third and most dangerous of these classes that I propose to deal to-night; and not only so, it is my intention to limit myself to the consideration of only one of the methods which have been adopted for the removal of tumors coming under this head. I need hardly remind my hearers that the following plans have been resorted to for the removal or destruction of sub-mucous uterine fibroids: absorption, excision, écrasement, sloughing, incision, and enucleation. As the title of my paper announces, my remarks are to be directed merely to the subject of enucleation.

Sessile tumors, or those which spring by a broad, non-pediculated base from the uterine tissue, are unfortunately not susceptible of expulsion into the vagina by contractile efforts on the part of the uterus, and cannot be removed or destroyed by any of the means just mentioned, except by the creation within their tissue of a process of sloughing; the impairment of their nutrition by direct and deep incisions into them; or their removal by enucleation. The first of these methods presents great dangers from septicæmia; the second is attended with the danger of hæmorrhage, and is withal very uncertain as to results, so that the third, although by no means free from danger, presents itself as a valuable resource in a most intractable affection, for the reason that it is the most effectual and least hazardous of the procedures now at our disposal. To those who have always heard of enucleation as of a surgical temerity presenting great dangers and being surrounded with great doubt as to practicability, this statement may appear exaggerated. Let me make clear to such the justice of my position by offering for their solution the following proposition: Given a tumor in the cavity of the uterus, attached, like that in the accompanying diagram, over the whole posterior uterine wall, to the fundus, and over a portion of the anterior wall near the fundus, and the



patient losing so much blood as to demand relief immediately. What could be done in the way of radical interference which would present as few dangers and as much certainty of attaining the desired end as enucleation? Does any one reply, "the creation of sloughing"? If so, I do not agree with him. Does any one talk of interference with nutrition by absorbents or by incision into the growth? If so, his experience with these means has been far more agreeable than mine. No; strange though it may appear, in such a case as this, enucleation, with all its dangers, offers more hope of a successful issue than any other means of which gynæcology is now possessed. The day may come, and I trust will, when electrolysis may throw it into the shade and usurp its place entirely, but that day has not come yet.

The fact that the attachment of submucous and even of interstitial fibroids to the uterus is not very firm, they being surrounded by a layer of loose cellular tissue, suggested to the mind of Velpeau the possibility of enucleating them; and, in 1840, M. Amussat put the theoretical plan into practice. Since that time, the procedure has been, with varying success, repeatedly resorted to. Dr. West, of London, reports twenty-eight cases in which it was adopted. Of these, exactly one-half proved fatal. This led Dr. West to take a very unfavorable view of the process, and to throw the great weight of his authority against it. The members of this society may judge how much prejudice must have been excited against it in America when so highly respected an author as Dr. West expressed himself concerning it in the following words: "Peritonitis, phlebitis, and pyæmia, the consequences of violence done to the uterus of women exhausted by large and repeated floodings, are dangers from which but few have altogether escaped; under which I fear that correct statistics will show that most have succumbed."

The dangers which attend the procedure, to fill out the list of Dr. West, just quoted, are septicæmia, peritonitis, phlebitis, rupture of the uterus and resulting collapse, hæmorrhage, and pelvic cellulitis. These may result not only from the operation itself, but, as has occurred to me on two occasions, from the preparatory dilatation of the cervical canal by tents.

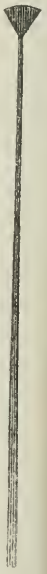
A few words now upon the circumstances which should encourage a resort to enucleation, and upon those which should render the practitioner loath to adopt it. If the cervical canal be well dilated, and the uterus susceptible of depression to the ostium vaginæ, or the vagina be so dilatable as to admit the hand, the case should be regarded as favorable to the procedure. If the opposite state of affairs exists, the case is not only an unfavorable one; the procedure will in all probability fail. The prospect of success is, for these reasons, much better in multiparous than in nulliparous women.

As to the conditions which must exist before enucleation should be considered warrantable, I would merely say this: it should not be resorted to unless the state of the patient absolutely requires it on account of prolonged and dangerous hæmorrhages. I have now under my care a lady whose case I have treated by palliative means for four years, rather than resort to a process which would endanger her life. For profuse hæmorrhage I use the tampon, astringents, rest, position, Indian hemp, etc., and subsequent to them I keep the uterus in position by a pessary, and repair loss as well as I can by diet, tonics, fresh air, etc. It may naturally be asked why I do not enucleate the submucous fibroid which I know exists as the cause of all this. My answer is this: because the uterine neck is long, narrow, dense, and completely closed; because the uterus is not very depressible; because my patient is a virgin of forty years of age, and the vagina is narrow and inelastic; and because the menopause holds out to her the prospect of relief. I cite this as the type of a case with which I would always temporize unless the prospect of death forced me to take the risks of enucleation.

Before relating some cases in which enucleation was resorted to, I shall make a few remarks upon the preparation of the patient for the operation, and then demonstrate the method of practising it in connection with the cases themselves.

1st. The cervix uteri should be fully dilated, so that the finger can pass through the os internum and sweep the lower segment of the tumor. No incomplete dilatation should content the operator. Such partial accomplishment of an important requirement might frustrate all his efforts. Full and complete opening of the os internum should be obtained by tents if it has not been created by the action of the uterus or the tumor, or he should leave the operation untried.

2d. The attachments of the tumor should be ascertained as accurately as possible. This may be done, after the use of tents, if they have been found necessary, by the uterine sound. As I have found this method imperfect, however, I have resorted to the use of the whalebone rod, which I here show, with a great deal of satisfaction. It consists in a pliable rod of whalebone, eighteen inches long, and terminating in a triangular piece, to which it is attached at the apex. The os being dilated, this triangular piece is slid up to the right of the tumor, and the degree of penetration noted. Let us suppose it to be four inches; a curved line of four inches is drawn upon a sheet of paper. The rod is then slid up on the other side of the tumor, we will suppose for two inches; this is likewise drawn upon the paper. It is now carried along the anterior wall of the uterus, and then along the posterior, and the record is transferred to the paper. The sum of these lines will give us a pretty accurate idea of the size of the pedicle.



3d. The uterus must be depressed to the vulva by the hand of an assistant placed over the hypogastrium, and a tenaculum fixed in the cervix, or the vagina must be cautiously dilated so as to admit the entire hand.

These preliminary steps having been taken, the removal of the tumor will often prove an easy task, and even cases apparently most difficult will yield to a persevering, bold, and cautious effort.

I shall now relate some cases for the purpose of illustrating these remarks.

Case I.—Mrs. M., a multipara, aged 38 years, was put under my care by Dr. Charles D. Smith. She stated that she had been suffering from metrorrhagia and menorrhagia for nearly five years, and her appearance attested her statement. She was greatly exsanguinated, excessively pallid, and so much weakened that she walked about her room with difficulty, and never left it. I looked upon the case as an exceedingly unfavorable one, but as the patient was losing a great deal of blood, I determined to explore the cavity of the uterus. After the use of three sponge tents, each of which was allowed to remain in situ twenty-four hours, and the last of which was very large, I succeeded in doing this, and found a sessile fibroid attached over the whole posterior uterine wall. Upon consultation with my friends, Drs. Metcalfe and Walker, who assisted me, I decided to make an attempt at removal of the growth. I accordingly cut the cervix up to the vaginal junction on each side, and, catching the tumor with a tenaculum, made a crucial incision through its capsule. Then introducing my finger, I peeled this back as far as I could, the patient lying upon the back under the influence of ether, and Dr. Metcalfe powerfully depressing the uterus. After I had peeled the capsule back for some distance, I desisted, as the patient appeared greatly exhausted, and I feared for the consequences of a prolonged attempt. She was then put to bed and given an opiate. After some time, she rallied, the hæmorrhage ceased, and the patient improved under good diet and tonics, but for four months she was confined to bed. During this time she took ergot regularly, and used rectal suppositories of half a grain of extract of belladonna. At the end of four months the tumor was expelled.

It may be objected to this case that I have no proof that the tumor was really removed by enucleation. This objection I acknowledge to be just, nevertheless I offer the history of the case for what it is worth in its present imperfect form. Whether it was surrounded by its capsule, and came away in consequence of injury done to its nutrition by the tents and incisions, or whether the tumor itself was delivered through the opening which I made through the capsule, I cannot say, for it was too far decomposed at the time of expulsion for this point to be ascertained.

After this, Mrs. M. entirely recovered, and on a visit to Switzerland, which she made just afterwards, acquitted herself well as a pedestrian.

CASE II.—Lizzie B., an Irish servant-girl, presented herself at my clinique at the College of Physicians and Surgeons, and gave the history of prolonged metrorrhagia, abdominal enlargement, and pelvic pains which had lasted for several years. Upon examination, the uterus was discovered to be as large as one in the sixth month of utero-gestation, and the finger, which could be forced through the os, discovered within it a large, hard fibroid which had evidently distended the os internum and cervical canal. Upon careful exploration, this tumor was found attached to the whole uterine surface anteriorly and posteriorly, except over a space of about two inches near the cervix. As the growth was too large for immediate enucleation, I decided to attempt to accomplish this gradually, as I had successfully done in the case of Mrs. M. Accordingly, Dr. Brown saw her at her house, and fully dilated the cervix by tents. I then made a crucial incision over the most dependent part of the tumor, and stripped back the capsule as far as I could. She was then put upon the use of ergot per orem and belladonna per anum. In ten days I saw her again, and repeated the stripping back of the capsule, and then I was gratified to find that the tumor appeared to be presenting at the mouth of its capsule, as if it were going to pass through in time and escape. At this time the patient's friends became dissatisfied with what struck them as being repeated failures, and prevailed upon her to call in the aid of a surgeon of this city. He proposed immediate removal, and the patient accepted the proposal. I did not witness the operation, but a friend of mine who was present tells me that the uterus was ruptured, as proved by the fact that a loop of intestine escaped into the vagina. At all events, the patient died just after this fruitless effort to remove the tumor.

Case III.—Mrs. D., a primipara, aged about forty years, presented herself at my clinique complaining of violent menorrhagia and metrorrhagia which had lasted for over a year. She was not much exsanguinated nor very pale. Upon physical exploration, the uterus was found to measure between four and five inches, and conjoined manipulation revealed the body to be about as large as that of the pregnant uterus at the end of the third month. An intra-uterine growth being suspected, it was decided to dilate the cervix for diagnosis as well as treatment. This Dr. Brown attended to, and in due time informed me that the whole cervix was fully dilated by a very large tent which passed completely into the uterus. The patient, having been etherized, was now placed upon the back, and one of my assistants forcing the uterus down into the pelvis, I withdrew the tent, seized the cervix by a strong tenaculum, and rapidly passed my finger into the cavity of the body. Here I found a rather soft fibroid attached by its whole base to the side of the uterus. Withdrawing my finger, I now attempted to noose this with Hick's wire-rope écraseur, but in vain. As soon as I tightened the rope, it would slip off the tumor. Now carrying up upon my finger a long, stationary-handled, blunt-pointed bistoury, I cut directly into the tumor, and then, introducing my whole hand into the vagina, and one finger into the uterus, easily turned the tumor out of its bed. After this was done I could distinctly feel the bed which it had occupied like a hole in the wall of the uterus. The cavity of the uterus was then washed out with solution of carbolic acid. The patient recovered without an unfavorable symptom.

CASE IV.—This case I shall relate at some length, as a full and very faithful history of it has been written by Dr. C. H. Giberson, of Brooklyn, to whose intelligent management, both before and after the operation, I feel that the patient was chiefly indebted for her recovery. I now proceed to read Dr. Giberson's history of the case: *

Mrs. M., aged 34, married, born in the United States, of nervous temperament and spare habit, the mother of five children, of whom the youngest is two and a half years.

She had always been in good health up to about a year since, when increased menstrual flow began gradually growing worse. Her general health suffered, and the metrorrhagia became so excessive that, during the past summer in the country, flooding was present seven weeks out of ten.

Early in September, 1871, I was consulted about the case, and on the 18th of the same month, made a vaginal examination. The uterus could be distinctly felt above the pubis; it appeared regular in contour, though unusually large, and was somewhat tender on manipulation. It seemed anteverted, cervix was large, elastic, and congested, lips eroded, os sufficiently open to admit end of finger, whilst the inner was about normal. Canal of cervix and body measured three and a half inches. An indurated tender spot was observed to the left of uterus, and distinct from it, apparently in the broad ligaments. She complained of darting pains through it. These pains and the tenderness were always relieved by the hæmorrhages. The week

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* Dr. Giberson's article, p. 43, went to press before the receipt of Dr. Thomas's; hence the repetition of this history.—Ed.

following this vaginal examination her menses appeared, and, in spite of absolute rest in bed, with the employment of local and general treatment, a profuse flow continued ten days.

Sixteen days later, flooding came on more violently than ever before. Styptics in the uterine cavity, the cervix constantly plugged, and vagina firmly tamponed, only checked without controlling the hæmorrhage, which lasted thirteen days.

Nov. 4, seven weeks after the first examination, owing to the excessive bleeding and increasing size of uterus, some abnormal growth was suspected within its cavity. Yet the internal os was not more open than in its healthy condition. The organ was anteverted, and had a depth of four inches.

Nov. 8.—With cervix dilated, quite a large intra-uterine growth was detected with the sound, firmly attached to the wall of body.

Nov. 12.—Dr. T. G. Thomas saw the case in consultation, and diagnosed fibrous polypus attached high up, near the fundus. He recommended an improvement of her general health before any operation for removal should be attempted. He also advised the tampon, with astringents locally, as probably the best means for controlling hæmorrhage.

Dec. 5.—She has been flowing twenty-one days in spite of our best efforts to arrest it, and her danger is imminent. After consultation with Dr. James R. Macgregor, of Yorkville, who rendered valuable aid throughout the progress of the case, it was thought best to have the operation performed as soon as possible. Dr.

Thomas was communicated with, and, coinciding with our views, was invited to perform it.

Dec. 6.—The cervix thoroughly dilated and patient under ether, Drs. Thomas and Macgregor present, a more thorough examination was made. The growth could be distinctly felt, firm and smooth, strongly attached by a broad base to the posterior wall from a point just within the cavity of a body up as far as the finger could reach. It was found to be a sessile submucous fibroid tumor. Two attempts to secure its base within the loop of a strong cord failed. Dr. Thomas then decided upon enucleation as the best means of removal. With blunt curved scissors he cut through the capsule of the tumor at the lowest point of attachment, and with the finger stripped it off a portion of the tumor. He then proceeded to break through the firm fibres connecting the growth with posterior uterine wall. This was an arduous task, requiring a hand in the vagina, with one finger through the dilated cervix slowly tearing away the tough base of attachment, whilst an assistant crowded down and steadied the uterus by firm pressure above the pubis. His hand becoming fatigued, I continued the same process of separation. This was kept up until the growth was held only by a comparatively small particle to the fundis uteri. The overdistension of vagina by hand caused some laceration of its mucous lining, and danger of opening the peritoneal sac was apprehended. She had been under ether an hour and twenty minutes, when, owing to these lacerations, the thinness of uterine wall, and especially the great difficulty in reaching the remainder of attachment, it was decided to desist, confident that nature would effect a complete removal of the tumor. Very little blood was lost.

The uterus was thoroughly syringed with a weak, tepid solution of carbolic acid; half a grain of morphine injected subcutaneously, and an anodyne suppository placed in the rectum. She rallied quickly and well. Opium was given freely during the first five days after operation. The vagina was syringed every six hours with the above solution, and fomentations kept applied to hypogastrium. The washings gave great comfort, and doubtless served to allay local irritation as well as to lessen the septicæmia. With each syringing fleshy masses and membraneous shreds were brought away. No unfavorable symptoms arose. Urine passed without much difficulty. Bowels remained quiet an entire week. No hæmorrhage whatever.

On the fifth day, after a few sharp uterine contractions, the great bulk of tumor had become completely detached, as was anticipated, and protruded from the vulva. It was the size of a large hen's egg, irregular in shape, with a tough, fibrous framework enclosing softer tissues more or less broken down. The microscope showed it to be a true fibroid.

On the following day, the sixth after operation, a tough, thin membrane, evidently the larger portion of the covering of the tumor, was extruded. The progress of case has been satisfactory, and now, the thirty-third day after the operation, she is about the house, has regained some flesh, has almost no discharge, the uterus appears healthy, its depth three inches, position normal, and no hæmorrhage has occurred. The regular period for menstruation has passed several days with no indications of its appearance.

Case V.—Mrs. D., æt. 27 years, married, nulliparous, called upon me on account of a metrorrhagia, which had been very profuse for four or five months. One year ago I had removed from her a very large fibroid tumor, which grew from one lip of the cervix and filled the whole vagina. It was as large as an ostrich's egg. I regarded its origin as so rare that it will be found delineated in the third edition of my work upon the diseases of women. After this operation she did well until the development of metrorrhagia. Upon vaginal examination the cervix uteri was found so much dilated as to admit the finger, which revealed the presence of a hard fibroid. Conjoined manipulation showed the uterus to be quite large and hard. By careful examination, I made out that the growth was sessile, and that its attachment was to the posterior wall of the uterus. The patient was losing so much blood that I advised immediate operation, and accordingly introduced a large sponge-tent, and agreed to attempt enucleation of the tumor in twenty-four hours. At the expiration of this time I operated in presence of Drs. Brown, Walker, and Ward. The patient being etherized, Dr. Brown depressed the uterus until the os was at the vulva. Seizing the cervix with a tenaculum, I then cut its walls on each side up to the vaginal junction, and catching the tumor with the same instrument, made with the scissors an opening into its capsule. With the scissors I then cut as long an incision as possible, first in one direction and then in another, without introducing my hand into the vagina. I then inserted a finger into the cut capsule, peeled this back in every direction, and in about twenty minutes succeeded in enucleating a tumor as large as a hen's egg. Then catching the capsule, I drew this away, leaving the uterus empty. The tumor and capsule thus removed were fitted one over the other, and exhibited to this Society a short time ago.

After this, the patient was given an opiate, kept perfectly quiet, and uterine cavity syringed out with a solution of carbolic acid once in every twenty-four hours. The after-care of her case devolved upon my partner, Dr. H. F. Walker, and he reports that not an unfavorable symptom developed itself, the patient rapidly progressing to complete recovery.

Case VI.—Miss O., about thirty years of age; put herself under the care of Dr. Edward J. Hogan, on account of metrorrhagia, which had lasted for nearly eight months with great profuseness. Upon vaginal examination, Dr. Hogan found the os internum fully dilated, the os externum so much distended as to admit the index finger, and a soft tumor presenting to the touch. He requested me to see her in consultation, when I verified what I have just stated, and further ascertained that the uterus measured between four and five inches. The next day was appointed for operation, and at that time, the patient being anæsthetized, I proceeded to enucleate the tumor, after having cut the cervix on both sides up to the vaginal junction and in vain attempted to ligate the tumor, or to draw it out of the uterine cavity. I am not positive about the attachment of the tumor, for unfortunately I had not with me at the time of exploration the proper instruments for making myself so. Finding that no amount of traction would cause the tumor to leave the cavity of the uterus, and that it was impossible to grasp it with the wire-rope écraseur, I cut into the capsule, and, introducing my finger, with great difficulty enucleated one-half of the growth. Then, continuing my efforts, the other half was removed. The operation occupied fifty minutes, and was accomplished with the greatest difficulty. This was due to the facts that the uterus could not be depressed so as to render the upper portion of its cavity accessible to the finger, and that the vagina was so contracted as to preclude the introduction of the hand within it. Had the patient been a multiparous woman, it would probably have proved much easier.

After the operation, Dr. Hogan regularly syringed out the cavity of the uterus with a solution of carbolic acid once in every twenty-four hours. The patient is now doing well, and, I presume, may be regarded as out of danger, since fourteen days have elapsed since the removal of the tumor, and no bad symptoms have yet shown themselves. The tumor removed was as large as a large hen's egg, its structure was remarkably hard and dense, although the sensation given to the touch was that of a soft mass.

I have now reported to the Society every case of uterine fibroid which I have removed by this method. One fact in connection with the subject which will strike the hearer with surprise is this, that out of five completed cases I have met with no death. I confess that I share the feeling, but such is simply the truth. Let it not be supposed, however, that I have met with no accidents in preparing my patients for operation. It is with regret that I am called upon to report two fatal cases. One was a lady, aged about 30 years, married, who was referred to me by Dr. Mann. She had long suffered from metrorrhagia, and upon examination I was led to diagnosticate the existence of a sessile uterine fibroid, situated within the cavity of the body. The exact attachments of the growth I could not make out, but it appeared to be non-pediculated. To decide as to diagnosis positively, and to prepare for removal of the growth, which the case appeared to me to demand, I introduced a sponge-tent. This was removed in twenty-four hours, but no second one was introduced, for my patient's pulse and temperature both admonished me of coming danger. On the following day peritonitis was fully established, and in four days she died.

A week ago a patient came to me from Dr. John Burke, of this city, complaining of severe metrorrhagia. Upon examination I came to the conclusion that she was suffering from the presence of a submucous fibroid, probably sessile in character. By my advice she entered the Strangers' Hospital, and I introduced a sponge-tent, and requested the house physician, Dr. Kuentzler, a very careful and competent man, to remove it in twenty-four hours, and to follow it by two others in succession. I was myself to remove the third, and then to attempt the removal of the tumor. On the morning of the day of the proposed operation the patient had a chill, the pulse ran up to 150, and the temperature to 105° Fahr. Dr. Kuentzler promptly removed the tent and syringed out the uterus with carbolized water, and the patient improved so much that in two days she was regarded as almost out of danger, but on the fourth day after the chill she became suddenly collapsed and died. Dr. Brown made a post-mortem examination and found abundant evidences of pelvic peritonitis, but it had not become general. He removed the uterus, and I now show it to the Society. It will be observed that the cavity of the uterus, which measures five inches from the os externum to the fundus, is occupied by a fibroid tumor about the size of an ostrich's egg. It is firmly attached to the right side of the uterus from the os internum to the fundus, the attachment being fully as broad as the tumor itself. No evidences of endometris are found to exist.

In reference to this case, let me remark that, had this cervix been fully dilated so that two fingers could pass through the os internum, my experience leads me to believe that the tumor would have been readily enucleated. The dangers attending dilatation by tents are in such cases always great; in this case they proved fatal.

There is one point in this paper which I fear, unless it be properly qualified, may mislead or disappoint those who without a great deal of experience investigate this class of cases. It will be noticed that I speak of determining the fact of a tumor being sessile or pediculated. When the cervix is so much dilated that the finger can be placed in contact with the tumor and guide the whalebone probe first to one side and then to the other, the nature of the attachment may usually be made out with positiveness; but unless the cervix be so dilated as to admit of the use of the finger as a guide, it is not usually a matter merely of difficulty, it is one of impossibility. This, at least, is my experience. When the evidences, rational and physical, of a large submucous fibroid have existed for some time and the os internum is not dilated, I generally lean to the opinion that the tumor is sessile; for, where it is susceptible of much depression by uterine contraction, it usually dilates the cervix at least down to the os externum. The converse of the proposition is equally true, though to neither would I attach a great deal of importance. I never feel that I have investigated as to this subject carefully until, if the cervix be contracted, I have dilated it so as to touch the tumor and pass the whalebone probe on each side of it. This is frequently practicable only at the very moment of operation, and I believe that no special operation should be determined upon until this investigation has been made. The operator should go to the case abundantly supplied with all the means which would be applicable to pediculated tumors, and at the same time be prepared to meet the necessity which may call upon him to resort to the more dangerous but more efficient plan of enucleation.

In conclusion, I would state that I would not be understood in this paper as comparing the advantages of enucleation with those of excision or ecrasement. I look upon it as, to a great extent, a *dernier ressort*, to be employed only when the less dangerous methods are entirely impracticable, from the fact that the sessile nature of the attachment does not allow of its being grasped by a wire or chain.

THREE OVARIOTOMISTS.

WELLS, KEITH, AND ATLEE.

BY S. FITCH, M.D., Portland, Maine.

HAVING recently had opportunity of observing the operations of the three great ovariotomists—Wells of London, Atlee of Philadelphia, and Thomas Keith of Edinburgh—I will sketch some characteristics of their several methods.

They all employ anæsthetics: Wells prefers bichloride of methylene, Atlee uses a mixture of ether and chloroform, Keith uses only sulphuric ether.

Atlee and Wells administer the anæsthetic after the patient is upon the operating-table; Keith's patient is etherized on her bed in an adjoining room, and then carried into the operating-room.

Atlee places the patient on a narrow table, nearly at right angles to or facing the window,* the knees bent over the edge of the table, the feet resting upon a suitable support, commonly a chair without a back, and the head and shoulders raised by pillows. He stands at the patient's right, with instruments on the window-ledge, his chief assistant on the opposite side of the patient, with ligatures and reserve instruments at hand.

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* The left side of the table drawn slightly towards the window, so that the light floods the left and lower part of the abdomen.

Wells and Keith place the patient full length upon the table, the thighs strapped to the top of the table by a broad girth, and loops passed around the wrists and fastened to this girth ensure immobility. The patient is then covered by a thin india-rubber sheet, with a hole in the centre to admit the abdominal protuberance, and the edge of this aperture, coated with adhesive plaster, sticks to the skin, and excludes all liquids from the patient's clothing.

Wells has the patient's right side towards the light, on a table obliquely across the window, the head being withdrawn to a convenient distance from the window, so that, as he stands on the patient's right side, the light falls diagonally past his right upon the parts under operation, the assistant and instruments being opposite him on the patient's left.

Keith places the table in front of, and parallel to, the window, the patient's left side next the window, while he stands at her right, facing the light, instruments on his left, and the chief assistant on the opposite side of the patient, but nearer her head, so as not to obstruct the light.

All these operators make the incision at first only two or three inches long, in the linea alba, midway between the umbilicus and pubes down to the sac, then pass in a finger to examine the surface of the tumor, and separate parietal adhesions (Atlee especially enjoins care, in case of intimate parietal adhesions, that the finger is inside the peritoneum, and not between the layers of the abdominal parietes *); they then evacuate the cyst or cysts, and draw out the remainder of the tumor through the small incision when practicable; but if adhesions, or the amount of solid constituents, prevent this, the incision is extended, and chiefly upwards, so as not to endanger the inferior or vesical reflection of the peritoneum.

Wells taps with his well-known trochar, having an attachment for seizing the sac. Keith's trochar is similar to Wells's, but longer and without the grapple. After puncturing, he catches the sac with long mouse-toothed forceps, which are then held in the hand with the trochar, to prevent the sac slipping off. Atlee uses the common large trochar and canula, and as soon as the sac is sufficiently emptied to admit of being caught, he holds it upon the trochar with his fingers and thumb, as being less liable than instruments to tear the sac. The contents of the sac, when they will not flow out through the canula, are evacuated by incision of the sac, or are broken up and scooped out by the hand.

As soon as the pedicle can be commanded it is secured. Wells and Keith apply the clamp immediately. Atlee first ties the pedicle, and, severing it close to the tumor, drops it back into the abdomen until all remaining adhesions are separated and hæmorrhage con-

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* And gives this test, that, if the finger can be freely moved past the umbilicus, it must be within the abdomen.

trolled. Adhesions are torn or broken, rather than cut, and the process is sometimes facilitated by inserting one hand within the sac, especially when the sac is fragile.

In case of inseparable visceral adhesions, the adherent portion of cyst is cut out, and afterwards the inner or excreting layer is peeled off, leaving the peritoneal surface attached.

Where vessels require tying, Keith uses fine carbolized catgut, and cuts off both ends, and thinks these ligatures are always absorbed. Wells does the same with fine unwaxed silk, and considers it equally liable to absorption. Atlee ties with waxed silk, and leaves one end of the ligature long, and brings it out with the pedicle, or, if high in the abdomen, at a point in the incision opposite the place of ligation; but he frequently controls parietal vessels and bleeding points by acupressure, using French toilet pins, or long sewing-needles with sealing-wax heads, passing them in through the abdominal walls and out again in such way as to compress the vessel between the needle and the abdominal parietes, and generally passes a figure-eight thread over the needle on the outside. If the omentum bleeds from numerous vessels and is much stripped up, he ties it *en masse*, or, if bulky, in several portions, and cuts off the distal end. He afterwards brings out each portion, and passes a pin through the lips of the incision, avoiding the peritoneum, and through the stump, and then crosses a thread over it around the needle, as in hare-lip suture.

Finally, the adhesions separated, the tumor removed, hæmorrhage controlled, and the cavity of the abdomen cleansed with soft sponges, the clamp is applied, if this has not been previously done, and the pedicle placed, without twisting, in that part of the incision where it will lie most easily—generally in the lower angle—and the incision closed by deep sutures, which include the peritonæum, three-fourths of an inch apart and three-eighths of an inch from the edge, and superficial sutures one-eighth of an inch from the edge, wherever they are required to correct eversion or inversion.

Wells and Keith use long unwaxed silk sutures, each end armed with a triangular-pointed straight needle, which they insert on the peritoneal surface one-fourth of an inch from the edge, and push out through the skin three-eighths of an inch from the edge. As the sutures are brought through, the needles are pulled off, and the ends of the sutures held by an assistant; a long flat sponge is kept over the intestines beneath the incision till all the sutures are introduced, when it is withdrawn, and the sutures tied, commencing with the lowest one. Dr. Keith, in tying, lets an assistant catch the first twist of the knot with the points of dressing-forceps, and hold it till he ties the second portion. Atlee uses fine iron wire sutures, which he introduces very rapidly through both edges at once with an improved tubular needle.

The sutures are drawn only moderately tight, so that subsequent tumescence may not cause strangulation of the parts included.

The end or stump of the pedicle is then swabbed with solution of perchloride of iron (Atlee and

Keith), or rubbed over with crystals of the same (Wells).

All these operators use the *clamp*, almost exclusively, for securing the pedicle.

Wells and Keith use a heavy lever-clamp, which is closed by long, powerful handles, the closure is then fixed by a strong screw, and the handles detached. Wells has discarded his circular clamp on account of its liability to cut the pedicle. Dr. Keith occasionally ties the pedicle with strong carbolized catgut, and drops it in. His brother, Dr. George Keith, was the first to advocate bringing the ligature of the pedicle through Douglas's *cul-de-sac*, which Handyside afterwards practised in 1845-46.

Atlee uses his beautiful and light clamp, described in *Am. Journal Med. Sciences* for April, 1871. He has given up the écraseur for dividing the pedicle.

Keith and Wells place around the pedicle, under the clamp, soft muslin bags loosely filled with carbolized chalk and camphor, and the same over the end of the stump, and a strip of carbolized muslin over the incision, then apply five or six adhesive straps, three inches broad, overlapping each other, from ilium to ilium, covering the hypogastrium, then cotton batting upon the abdomen, and a broad flannel bandage over all complete the operation, and the patient is carried to her bed.

In examining or dressing the pedicle, the adhesive straps covering the clamp are not disturbed at their terminal attachments, but cut through at their middle, and afterwards replaced.

The after-treatment is essentially expectant, not passively, but carefully, jealously, unremittingly expectant. If no symptoms appear, nothing is done to invite them. The service of the nurse is to be quiet, cheerful, prompt, unofficious, the main object being to keep the patient comfortable, restful, and happy. The catheter used as often as required. Pain controlled by suppository, or subcutaneous injection of morphia. When there is thirst and nausea or vomiting after the operation, Dr. Keith gives frequent sips of hot water, and Mr. Wells oftentimes finds the ice-bag to the epigastrium very grateful. Flatus is relieved by the rectal tube, and sometimes by puncture with a fine trochar. If there is evidence of noxious intra peritoneal effusion, with fulness and fluctuation in the post-uterine vaginal *cul-de-sac*, the part is punctured.

Pregnancy is not considered an insuperable bar to the operation. I saw a patient of Dr. Keith's in perfect health who had recently given birth to a healthy child at the full time after ovariotomy during the pregnancy; and I saw two patients of Dr. Wells's, one of whom had just got up from a healthy parturition, after ovariotomy six months previously, and another perfectly well in the ninth month of gestation, after an ovariotomy six months before, or in the third month of her pregnancy.

Speaking of results, Mr. Wells told me of a patient from whom he had removed both ovaries, who informed him that in her conjugal relationships "before the operation she had been only passive, but since the operation was always aggressive."

Mr. Wells's ovariotomies last August numbered 440—8 deaths of the last 40. From March, 1870, to April, 1871, he had a succession of 32 cases in private practice without a death.

Dr. Atlee is approaching his 300th, and is now completing a magnificent work upon the diagnosis and treatment of pelvic and abdominal tumors.

Dr. Keith is the youngest of the three. I do not know the exact number of his operations, but his success has been very remarkable.

INTERESTING CASES IN OBSTETRIC PRACTICE.

By WM. H. DOUGHTY, M.D.,
Professor of Materia Medica and Therapeutics, in Medical College of Georgia, Augusta, Georgia.

CASE I.—*An Incomplete Rupture of the Perinæum, occurring during the birth of the Shoulders.*

At 2 o'clock A.M., Sept. 30th, 1871, I was called to see Mrs. ——, aged 32, in labor with her sixth child; she is a woman of small stature, but her previous labors have been safe and without difficulty. General condition is as good as could be desired, and she has been in pain for several hours. An examination per vaginam revealed the soft parts in a good, relaxed state, the os uteri being also dilated to an extent sufficient to enable me to discover a vertex presentation with left occipito-anterior position. At 6 o'clock A.M., the os being fully dilated, the membranes were ruptured, and the whole field of the presenting part carefully swept by the finger.

After the escape of the waters, the head began a rapid descent, the second stage bidding fair to be short. Nothing unusual occurred in the progress of this stage until after the birth of the head, when, in consequence of a delay of the shoulders, long enough to endanger the safety of the child, an examination was made as well to ascertain the cause of this delay (the pains being still active) as to facilitate the delivery. It was then discovered that *the left fore-arm and head of the child occupied the vulva, the elbow resting strongly on the floor of the pelvis against the perinæum, and so fixed in that obliquely forward position as to constitute the real obstacle to delivery. The elbow was slightly in advance of the shoulder, and the whole so wedged into the pelvic outlet as to render disproportionate the diameters of the passage and the engaging part.* I sought to relieve this difficulty in the interval of pain by replacing, if possible, the elbow near the side or body of the child, having first ascertained that it did not yield to gentle traction upon the forearm; the former course seemed most likely to protect the perinæum and permit the expulsion of the shoulders. While thus replacing it, a strong pain came on which effected delivery *by driving the point of the elbow through the perinæum, producing a laceration that extended to the sphincter ani.* The placenta soon followed.

The child though partially asphyxiated, was soon restored, the lividity of the face and head remaining quite distinct, however, for nearly twenty-four hours. Weight about 6½ pounds; no unusual breadth to the shoulders. The knees of the mother were bound together, and she confined to either side for twelve days. In this way the rupture healed by direct adhesion, and all subsequent local weakness or trouble averted.

Remarks.—The above is classified as an *incomplete* laceration of the perinæum, the rent not involving the sphincter ani. It is remarkable, however, not so much from the character of the lesion as from the *cause and mode of its occurrence.* Lacerations of this character, although they cannot be said to be frequent, are nevertheless among the common possibilities in the experience of the obstetrician. Due to causes pertaining to the mother, child, and the instrumental means occasionally necessary to effect delivery, it is one of the accidents of labor to which his attention is early and constantly directed. The numerous modes of, and devices adopted for, supporting the perinæum, as well as the strict injunction as to the employment of proper and judicious support to the part during the birth of the head by most authorities, all serve to invest this item of his duties with an interest which he dare not neglect. If he takes position with those who object to the measure, upon whatever grounds stated, and the accident occurs, he can scarcely hold himself free from a certain degree of inward censure through respect to the opinions of those equally eminent and the more numerous of the profession, who honestly teach that judicious support is useful in most cases. But the birth of the head being effected, the necessity for further interference of this kind virtually ends, the larger diameters having so distended and relaxed the maternal parts as to render comparatively easy the transit of the shoulders and body. I am not unmindful of the fact that mention is made of supporting the perinæum by authors during the exit of the shoulders, but manifestly in so incidental a manner as to indicate that no particular importance is attached to it. From the nature of the case, less necessity exists for such service, and the accoucheur is embarrassed in rendering it by the occupation of the pelvic outlet with the parts already delivered, and by duties connected therewith. Moreover, that such attention is superfluous may be argued from the fact that lacerations produced by the birth of the shoulders, with or without support, including also cases where difficulty arose after the birth of the head, from inordinate size and weight of the body (closely bordering on monstrosity), are among the rarest possible accidents of the lying-in chamber. Indeed, I am not able to point to a single one after diligent search among the authors at my command. Such an instance would amount to an obstetric curiosity. Certainly, if the possibility of its occurrence presented a real practical issue, the accumulated experience of the past and the keen observation of eminent obstetricians of the present day would favor us with at least solitary instances.

Dr. Agnew, in an article on "Laceration of the Female Perinæum. Its History and Treatment," Vol. I. *Pennsylvania Hospital Reports*, 1868, in discussing the causes that relate to the child remarks: "It is a question by no means clear, whether the passage of the shoulders does not *often** produce the damage ascribed to the head." In the history of the cases, ten in number, contained in that article, I can find nothing that justifies this stricture. One would suppose that something within his observation led him to make such a remark, but it does not appear. I call it a "stricture," because it is bad enough to have such an accident occur even when wholly unavoidable, but not to know *when and by what part* it was produced amounts to criminal culpability.

Doubtless, instances of laceration during the birth of the shoulders are somewhere to be found among the musty records of the obstetric past, but I greatly fear that it would require the zeal and tax the patience of a palæontologist to bring them to light.

Cazeaux, who is usually profuse in his obstetric details, particularly on the subject "dystocia," furnishes no illustration of this kind, notwithstanding he speaks, on page 216, 5th American edition, of the delivery by version of a monster child that weighed 18 pounds, was 25½ inches long, the greatest circumference of the head measuring 16⅛ inches, and the *bi-acromial diameter being 9 inches.* On page 840, discussing the unusual size of the shoulders as a cause of difficult labor, he mentions three cases occurring in his own practice where, after birth of the head, the shoulders from their great size rendered extremely difficult the completion of the labor.

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* The italics are mine.

Churchill, in his "System of Midwifery," pages 463 and 464, enumerates a list of thirteen causes for lacerations, among which no reference is made to the *shoulders*. Under "Malpresentations," he says, "face presentations, involving the passage of the head in its longest diameter over the perinæum, breech, or footling cases, which do not receive a proper direction so readily as the head, may also lacerate the perinæum. Dupuis relates a case, where one foot came through the vagina, and one was *forced through the perinæum*. This is the only case where the accident happened at any other time than during the birth or extraction of the head of the child that I have been able to find. In the singular mode of its occurrence it certainly bears some analogy to the case above reported.

Returning to the discussion of the latter, it is to be remarked that the cause of the injury, which was clearly the *forward position* of the left arm, would classify the labor with such as are rendered preternatural by "compound" or complicated presentations. It is well known that vertex presentations may be complicated by the descent of a hand or a foot, or both, and delivery be thereby rendered sometimes impossible, except by version or craniotomy. The falling of the arm was not low enough to prevent the head from engaging at the brim and traversing the pelvic passage, but, by some accidental circumstance peculiar to the labor and not well appreciated, it acquired the faulty position that caused it to be forced through the perineal structures. In this doubly faulty position it more closely resembles the case reported by Dupuis. Who can divine the peculiar circumstances then in active operation, that caused one foot in a footling presentation to traverse the perinæum, while the other passed through the vagina? I can imagine that the fore-arm being flexed slightly on the arm, and the whole descending somewhat in advance of the shoulders, the point of the elbow might impinge upon the deeper portion of the perinæum and there rest, until by forcible flexion or extension it no longer proved an obstacle to delivery. Failing of this, I felt it tear through the part at the escape of the shoulders. It must certainly take rank with the most unique obstetrical cases in *its cause* and *time* of the occurrence of the laceration.

Case II.—*Hydrorrhœa Gravidarum, with premature birth of twins.*

In the early part of May, 1871, I was consulted by the husband of Mrs. —— in regard to a watery discharge from the vagina that had rather suddenly made its appearance, and without obvious cause, the day previous, she being then in the fifth month of her fifth pregnancy. It was represented to be quite abundant and constant, but unattended by pain or marked uneasiness of any kind. He was advised to keep her quiet, and observe the recumbent position as far as possible without confining her strictly to bed, and forewarned of the probability of a miscarriage. As they were very anxious for another child, she scrupulously observed the directions, confining herself to her room for a month or more, and foregoing all household duty. Meanwhile the leakage continued, ceasing for a few days, and then recurring more or less copiously; and, with the advance of gestation, the escape became apparently greater at night than during the day, or when walking about the room.

Prior to the night of 3d July, it had almost ceased for a period of ten days or more, thus encouraging the hope of approximating at least the completion of her term. As well as could be ascertained, she was then about six and a half months advanced. At this time it suddenly increased during the night, with some show of blood also, and continued to drain in large quantity during the next day. On morning of 5th July she awoke feeling as well as usual, and quite free from the annoying flow of water, but, while taking a bath, was startled by uterine pains, strong and frequent.

Having been summoned at 6 o'clock A.M., the signs of labor were unmistakable, and the os uteri found dilated to the size of a dollar; the presenting part (vertex) was low down in the cavity of the pelvis; position easily determined to be left occipito-anterior; *no bag of waters had formed, and there had been no escape during the pains up to this time; the membranes were loosely drawn over the presenting part, with no signs of a rupture at any point.* At 7.45 A.M. a small premature child was born, which made feeble efforts at respiration, and its delivery was unattended by any positive appreciable amount of water. The size of the womb indicating the presence of another child, an examination showed an unbroken sac, with large accumulation of waters. The breech rapidly descended, with the birth of a male child, much larger and stronger than the first, which cried lustily. It lived about two hours. There were two placentas, with corresponding sacs, both of which were removed on account of hæmorrhage. The mother did well throughout the lying-in period.

Remarks.—The term *hydrorrhœa* is generally applied to those discharges of a serous character that occasionally make their appearance suddenly in the latter half of gestation. In a sense they may be spoken of as spontaneous, since they are not attributable to any obvious external cause, as injuries, unusual exertion, etc. They occur irrespective of the life and habits of the female, as far as can be discerned, and are all the more startling and interesting on this account. It has been properly observed by Dr. Barnes that this flow of waters is "not to be regarded as a definite form of disease, but only as a phenomenon which is common to many different anatomical conditions." This phenomenon signifies an important change in the relations of the enveloping membranes of the child in utero, to each other and to the child, which may or may not hazard the safety of the latter. This change becomes a pathological condition, which, by draining the uterus of the proper amount of fluid, may precipitate the premature detachment or separation of the fœtal membranes. To differentiate the particular lesion in any given case presents one of the most difficult problems to the practitioner. Denied the benefits of a visual or tactile examination of the organ which, *ex necessitate rei*, must be of little use at best, he is left to conjecture, and that alone, as to the nature of the case under treatment. If he addresses himself as to the character of the flow, both as to time, quantity, and quality, he finds nothing to guide to the formation of a correct conclusion. If all cases were due to the same lesion, clinically and autopsically demonstrated, it would be an easy task; but it is simply impossible to ascertain whether he has to deal with a simple separation of the membranes from the uterus or with a so-called dropsical collection between the chorion and amnion; or, again, with a veritable rupture of the ovum-sac, with an escape, not of "false waters," technically so-called, but the liquor amnii proper to parturition. One symptom alone is afforded in all cases, namely, *the flow itself;* and delivery supplies the information when its possession is of no practical use—an inspection of the membranes after delivery being usually regarded as the only sufficient umpire.

Under these circumstances, the question arises, What is the duty of the physician in the premises? Manifestly to treat the case as arising from the gravest lesion, namely, *rupture of the membranes*, with miscarriage as the probable result. This course, to say the least, is a conservative one, giving to the child the best chance of being carried to time by enjoining upon the mother that state of quietude which is most favorable to it. Of no serious import to the mother, it is clearly right to give the child the benefit of the doubt by limiting the amount of drainage to the smallest possible loss. There is no evidence, I believe, that, a separation of the membranes from the uterine walls once effected, adhesion ever again occurs; or, in case of rupture of the membranes, that closure takes place.

Giving a grave aspect to such cases is not in accordance with the advice of Cazeaux and other authors. The former says, "Generally speaking, this is not a serious affection. Nevertheless, if frequently repeated, it might bring on premature contractions." This opinion, which, by the way, does not control his practice (absolutive, non-abortive), is evidently based upon the view elsewhere expressed, that these fluids have "no relation in their seat to the liquor amnii"—have, therefore, been called "false waters," so as to distinguish them from those which escape after the membranes are ruptured in labor. And in reference to the opinions of Mauriceau, Camper, and Capuron, who suggested that in certain cases "the membranes may yield at a point quite distant from the neck, and the superabundance of this fluid (liquor amnii) gradually drain away, though still an abortion may not occur"; he adds: "This explanation is not applicable to the greater number of cases of hydrorrhœa, *for observation does not show that, when water came away several times during pregnancy, the amount lost during labor was less than usual.*"

Now, it is because observations in the case reported did show this to be true that I have deemed it worthy of publication and discussion. It is a clinical demonstration of the correctness of a pathological supposition; it is the only thing short of an ocular inspection of the membranes after delivery that could have given such proof. The sac of the first child was literally *empty*, while that of the second was full. Whence the flow of waters for nearly two months, if not from a hidden rupture at a distance from the os which allowed the escape when position of the mother or quantity favored? We repeat the question, Why the emptiness of the sac?

The pathological view that represents all such cases as dropsical, or due to accidental collections of waters between the chorion and uterine walls, or between the amnion and chorion, is too exclusive to be safely adopted. To hold that "the discharge is never real liquor amnii," and "that it is always from some dropsical condition of the membranes external to the amnion," is to inculcate error and gainsay the clinical history of at least a part of these cases. One well-established case is sufficient to controvert so dogmatic a theory.

On the other hand, it would manifestly be as great an error, clinically and pathologically speaking, to assert that hydrorrhœa was uniformly due to a rupture of the amnion, and that the waters thus escaping were the same as those of parturition. The truth lies between them; sometimes it arises from one cause, and sometimes from another. It is a "phenomenon" common to at least several pathological conditions. *The clinical end to be sought in the management of the affection is the prolongation of pregnancy to as near the full term as possible, and this is only to be attained by regarding every case as seriously threatening its early* *interruption.* All being thus brought within the category of those due to actual rupture of membranes, a stringent course, prophylactic of miscarriage, is uniformly applicable. I did not inspect the membranes after delivery, my attention being directed to the grave condition of the mother induced by the hæmorrhage; but it may not be amiss to cite the following case, taken from the chapter in Cazeaux devoted to "Dropsy of the Amnion." A lady, six months gone in her third pregnancy, lost suddenly a large quantity of water during the night. From this moment until the termination of pregnancy, there escaped every two or three days a pint and a quarter of fluid. The woman was delivered of a large boy. The after-birth was expelled spontaneously. I received it in my hand, says the author (Ingleby), so as to avoid laceration of the membrane. I examined it with the greatest care, and discovered, besides the opening made by the head in the centre of the membrane, a second opening of circular form near the edge of the placenta. It was doubtless through the latter that the fluid escaped from time to time.

The attempt to gainsay the force of such evidence as is furnished by these two cases is almost equivalent to a denial of the possibility of a rupture of the membrane before the completion of pregnancy. The same obscure conditions that predispose to and produce, disease of the fœtal structures, leading to degenerations of structure, placental apoplexy, accidental hæmorrhage, etc., also operate in the causation of direct rupture of membranes, as well as separation of one membrane from the other and from the uterus.

CASE III.—*Hydrocele of the Funis Umbilicalis.*

On 6th December, 1871, I attended Mrs. —— in her first accouchement. She gave birth to a male infant, which made feeble efforts at respiration, and died apparently from the difficulties that marked the second stage of the labor. It was a plump, well-developed child, rather above the average in size, but, during the efforts that were made to sustain its failing respiration, a transparent sac, filled with a straw-colored fluid, was observed hanging from the umbilical end of the cord. This bag or sac had a capacity of about two fluid ounces, about three inches in length, and was attached to the margin of the umbilicus and an inch of the cord on one side. The whole circumference of the cord and umbilicus was not involved in this attachment, so that, in whatever position the sac was held, its contents were not diffused around them. Nor was there any communication with the abdominal cavity. There was likewise no hernial pouting of the umbilicus, such as is common to some infants, adding thereby an element of weakness more or less calculated to invite defective conditions of the parts. In every other respect the cord was normal.

Remarks.—Among the *anomalies of the cord* this is one of the rarest. In obstetric literature I have failed to find more than the mention of a few cases that may be presumed to be identical, and, in conversation with members of the profession of the largest obstetrical opportunities, I have found none who have met with particular anomaly.

The cord may be twisted, knotted, or varicose; have cystic formations along its length, similar to those found on the fœtal surface of the placenta; present numerous varieties of implantation into the placenta both as to place and mode; present also striking alterations in the number and relation of the blood-vessels; and yet, again, vary in the place of its connection with the child. These are far more interesting and serious than the rare but trivial accident noted above. I say trivial, because there is no reason to believe that it can influence in the slightest degree the well-being of the child.

I have called it *hydrocele* from the strong analogy that it bears to hydrocele of the spermatic cord and round ligament of the female. I think the name appropriately designates the lesion which simply involves the separation of the amniotic sheath of the cord from the structures within by reason of the accumulation. It is the same lesion referred to as "dropsy of the cord" in statistics that have passed under my eye. In the Sydenham Reports for 1867, page 387, *dropsy of the cord* is recorded four times in 2,471 labors, in which all the anomalies of the placenta and cord had been carefully noted. I presume this is the same lesion, the term dropsy being applied in the sense that hydrocele of the tunica vaginalis testis is called *dropsy of the testicle;* and that hydrorrhœa is denominated a dropsy, meaning thereby a collection of waters or fluid between fœtal membranes, which may or may not have shown itself before delivery. Dr. Valenta says he records 80 of the latter in the above number of labors (2,471).

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

REPORTED BY CHARLES S. WARD, SECRETARY.

STATED MEETING OF OCTOBER 17, 1871. DR. NOTT IN THE CHAIR.

ARREST OF DEVELOPMENT IN THE URETHRA.

DR. EMMET exhibited a cast and related the following case: Last spring he was asked to see a girl of twelve years of age, in whom there was a cleft of the symphysis pubis, and an absence of a portion of the urethra, so that the girl could not retain her urine longer than fifteen minutes. Dr. Emmet proposes to make a urethra from the nymphæ, as he has done heretofore where the urethra has been destroyed by ulcerations or sloughs following parturition. He thinks there will be sufficient retentive power secured. As a temporary expedient, the urine is retained by means of a dumb-bell shaped instrument, one extremity of which presses the urethra against the symphysis, the pressure being caused by the weight of the other extremity of the instrument, having the perinæum for the fulcrum. Dr. Emmet further stated, in reference to the retentive power of the urethra, that the most surprising case which had come under his notice was that of a patient who had neither vagina nor uterus, and in whom sexual intercourse was habitually effected through the urethra, notwithstanding which she could retain the urine perfectly.

ARTIFICIAL VESICO-VAGINAL FISTULA IN TREATMENT OF CYSTITIS.

DR. EMMET exhibited a short glass tube, lipped at each extremity, which he had recently employed, as is his custom, in the treatment of a case of cystitis which had resulted from a small ulcer in the urethra. Dr. Emmet made an artificial vesico-vaginal fistula, and introduced the tube to prevent the healing of the fistula. He finds that, unless some such procedure is resorted to, an artificial fistula will almost always close at once. The tube or button exhibited not only prevents the closure of the opening, but allows of perfect drainage, thus giving complete rest to the bladder. In the case referred to, the urethra was forcibly dilated after the production of the fistula. The patient was greatly relieved by the operation, and one week after the largest sound could be passed through the urethra with ease and without pain. During the past week, however, the patient began to suffer severely, and he found on examination that the tube was covered with an incrustation which by its irritation had gotten up an inflammation. On account of the amount of incrustation it was found difficult to remove the tube. As this has never occurred in any of his cases heretofore, he believes this incrustation to be due to the lead in the glass, or some other impurity.

GRANULAR URETHRITIS.

Dr. Byrne said that within the last three months he had had a case in which the condition of the urethra was similar to the case of Dr. Emmet. The patient had suffered from incontinence of urine for three years, and had been subjected to various methods of treatment. One year ago she first came under the care of Dr. Byrne, who tried various topical applications—anodyne injections and alkaline preparations—but these producing no beneficial effect, he determined to try the actual cautery. Having etherized the patient, he passed a conical electrode burner the entire length of the urethra, the electrode being connected with a galvano-caustic apparatus. Five days after an eschar came away, the patient's sufferings not having been aggravated by the operation, and one week subsequently all pain ceased, and the patient was able to retain the urine perfectly.

Dr. Emmet thought the remedy of Dr. Byrne a dangerous one unless in the hands of an expert. In Dr. Byrne's case the urethra was granular, while in Dr. Emmet's case the urethra was healthy, except at one point.

Dr. Jacobi asked Dr. Byrne whether in his case the pain ceased immediately after the use of the galvano-cautery?

Dr. Byrne replied that the pain was about the same.

Dr. Jacobi said the pain might have ceased if due to the sensitive membrane after granulation had taken place.

Dr. Noeggerath remarked that a friend who uses the galvano-cautery in chancres says that it causes but little pain. Dr. Noeggerath further stated that the application of the cautery is not followed by cicatricial contraction. He once cauterized the entire urine cavity, but no contraction followed, as the sound passes easily.

Dr. Jacobi confirmed the statements of Dr. Noeggerath. He has employed the galvano-cautery in removing subcutaneous humors and angiomata in children with but slight cicatricial product.

Dr. Nott stated that he saw Dr. Neftel use the cautery by means of needles in a carcinomatous breast; a slough resulted as large as a billiard ball.

Dr. Noeggerath said he would never employ the cautery in such cases, as amputation is preferable, for with the cautery we never know where we go; the so-called fifth lobe is not removed, as it is situated nearer the axilla, and is often the seat of secondary deposits. In amputations this lobe can be removed, and other tissues adjoining, which, though apparently healthy, often have a cancerous infiltration beginning. Dr. Byrne stated that during the past eighteen months he had removed by amputation fourteen breasts, in but two has there been any return.

Dr. Dewees mentioned a case which occurred twelve years after removal.

Dr. Brown presented two specimens taken from the same subject, with the following history: He had been consulted about a month previously by a lady sent to him on account of uterine hæmorrhage, by a medical friend in Brooklyn. The patient was a widow, about thirty years of age, of pretty full habit, and apparently not much reduced by the drain to which she had been subjected. She stated that she had been flowing at intervals for about six months, and that during the past two months the flow had been pretty nearly constant. She was quite nervous, and showed by her manner, much more than by her appearance, the effect of considerable losses of blood. On making a vaginal examination a cancroid growth, about as large as a hen's egg, was found sprouting from the cervix uteri, but not involving the whole of the neck of the womb, there being about a third of an inch of apparently healthy tissue between the growth and the utero-vaginal junction. Regarding the case as one in which there was good reason to hope that the whole of the diseased tissue could be taken away, he advised its removal by means of the galvano-cautery as soon as practicable. This recommendation being accepted, he was requested to perform the operation, which he did on the 13th of September, being assisted by Dr. John Byrne, of Brooklyn. Dr. Charles S. Ward, and the attending physician. The wire was readily passed around the cervix, the patient lying on her back in the position for lithotomy, and the loop passing behind the mass, while the shank or porte-fil was under the urethra. After the removal of the growth, a small vessel was found bleeding in the stump, which was soon controlled by the cautery. As a precautionary measure, a tampon of cotton with some persulphate of iron was introduced, and the patient left in charge of the attending physician. Dr. Brown saw the patient on the third day after the operation, and removed all of the tampon except the piece first introduced, which, being hardened by the persulphate, and adherent to the parts, he left for the attending physician to remove on the following day, after it should have been softened by vaginal injections. When her physician came to see her next day, she told him that the rest of the tampon had been expelled while she was passing water. Upon introducing his finger to assure himself that it had all come away, he felt what appeared to be a piece of cotton, and seized it with a pair of forceps, but the patient complained of so much pain when he attempted to remove it that he concluded he had mistaken a fold or slough of mucous membrane for a part of the tampon, and desisted. The patient progressed in the most favorable manner after the operation until the eleventh day, when her physician was summoned hastily, and found her suffering from trismus affecting the muscles of the jaw and the respiratory muscles. Upon enquiry he found that on the preceding day she had, in opposition to his positive instructions, got out of bed, busied herself about the kitchen for some time, and had then stripped herself naked, and, standing on the oil-cloth in a cold bath-room, had taken a sponge-bath. She was treated with brandy, quinine, and opium, and the trismus almost entirely disappeared, so that on the following day she was up and repeated the bathing performance of the previous day. The trismus returned, and as she was not pleasantly situated in the house where she was stopping, and her physician found it impossible to have his instructions carried out, he prevailed upon her to enter the Brooklyn City Hospital, where she died suddenly on the fifth day after the attack of trismus. She had no episthotonos and no spasm, nor did she have at any time any symptoms referable to the pelvis. Temperature just before death, 108° F.; just after death in the vagina, 109°.

At the post-mortem examination, which was made quite hurriedly, a piece of blackened cotton was found in the vagina, and protruding into the peritoneal cavity through a rent in the cul-de-sac of Douglas.

The specimens presented were the diseased portion, removed by the heated wire, and the uterus, with part of the vagina and bladder, showing the position of the opening into the peritoneal cavity.

A suspicion having been expressed that the opening into the peritonæum might have been done at the time of the operation, Dr. Brown was anxious to have the opinion of the Society on that point. Also, whether the trismus was necessarily due to the pelvic lesion, or whether it might not be ascribed to the imprudence of the patient. Was it probable that a hole nearly an inch in length could have been burned into the peritonæum, and a piece of cotton saturated with the subsulphate of iron thrust into it, without the patient experiencing a single symptom for eleven days, or any indication of peritonitis being found after death? And would it be possible to burn such a hole by means of a wire loop, without dragging the uterus very far down, so as to include a portion of the vaginal tissue of the cul-de-sac in the loop? and if a part was so included, would it not be found adherent to the part removed? In the present case no traction whatever was made upon the uterus, and the wire cut through nothing but the cervix, as was unmistakably shown by the specimen.

The specimens were carefully examined by Drs. Peaslee, Emmet, Jacobi, Noeggerath, Barker, Nott, and other members of the Society, and it was the unanimous opinion of the members that the opening could not have been made at the time of the operation, but was probably due to ulceration caused by the cotton and subsulphate of iron, which had extended through the mucous membrane of vagina and subjacent connective tissue, but had not gone through the peritonæum, the appearance of this membrane clearly indicating that it had not been involved in the ulcerative process, and that the rent which it showed was a post-mortem lesion, probably caused by the finger of the physician making the autopsy.

Dr. Barker said, *à propos* to Dr. Brown's case, he once saw a case in Bellevue Hospital of a woman who was taken with flooding at her house, and a physician who was called in tamponed the vagina with masses of cotton, moistened with the subsulphate of iron; the patient then went to the hospital, where these masses were removed with difficulty. In this case a urethro-vesical fistula resulted from a slough, no instruments whatever having been used.

STATED MEETING, NOVEMBER 21, 1871. DR. NOTT IN THE CHAIR.

Dr. Peaslee exhibited a specimen taken from an ovarian tumor which was removed by Dr. Weir. The tumor appeared to be a monocyst containing a solid portion. On inverting the main cyst, the portion which at first sight appeared like a solid mass was found to consist of three or four small cysts, one of which contained a milky fluid and hair; another contained a sebaceous fluid peculiar to dermoid cysts, and a bony development resembling a lateral half of a fœtal inferior maxillary bone in that a condyle, coronoid process, and body were plainly developed. Near the symphysis menti the bone was rough, and one tooth of the character of an incisor was found in the usual site of the molar teeth. These cysts may contain bone muscle, and even nerves. In a case reported by Schreibel, there were about three hundred teeth in all stages of development and of all kinds—some perfect and some imperfect. Rokitansky has a specimen in which one set of teeth overlies the other in the same relations as the deciduous to the permanent teeth. Dr. Peaslee does not consider the specimen as really a lower jaw, but many times these growths assume that form. In this connection it is an interesting fact that the lower jaw and clavicle are the first bones to exhibit lacunæ, etc. The tumor from which this was taken appears to be an oligocystic variety of monocyst containing a dermoid cyst. If it be a combination of the two, it is rare. Dermoid cysts are always congenital, and this one preceded the development of the main cyst, and was probably the cause of it.

STATED MEETING, JANUARY 2, 1872. DR. NOTT IN THE CHAIR.

DR. J. L. BROWN presented a specimen of cancer of the ovary. (See AMERICAN JOURNAL OF OBSTETRICS.)

ENUCLEATION OF FIBROUS TUMORS.

DR. GIEBESON, who was present by invitation, presented a specimen with the following history:

The fibrous tumor now exhibited was removed from a woman aged thirty-five. She is the mother of five children, and enjoyed good health until one year ago, at which time she began to suffer greatly from menorrhagia, while during last summer the flow became almost constant. Dr. Giebeson saw her in September, and found the uterus large, and the cavity nearly four inches in length. No tumor was at that time suspected, though he feared that a cancerous deposit was taking place, as the family history was such as to give cause for such a suspicion. One month later, Dr. Giebeson dilated the uterus, and detected a uterine tumor. The case was seen at that time by Dr. Thomas, who diagnosticated a fibrous tumor, and advised general treatment with a view to improve her condition sufficiently to render removal safe. Hæmorrhage shortly after came on so violently that tamponing was necessary, and was resorted to repeatedly during the following twenty-two days, at the end of which time the cervix was again dilated, and the patient etherized. The tumor was found to have a broad pedicle. Dr. Thomas then attempted to noose the growth with a wire, but it was found impossible to do so satisfactorily, and he then cut the capsule of the tumor with the blunt scissors, and with his finger enucleated the mass as far as the fungus, but did not remove it. There was no hæmorrhage during the operation. Once in six hours subsequent to the operation, the uterus was syringed out with water which was carbolized. On the sixth day after the operation, Dr. Giebeson was summoned hastily to the patient, and found a mass protruding from the vulva, which proved to be the tumor, and the following day the capsule was discharged. The patient made a rapid recovery.

Dr. Peaslee, in remarking upon the case, said this class of cases gives more satisfaction if the treatment is properly carried out than almost any other, as the patients suffer so from menorrhagia, metrorrhagia, and metrorrhœa, and the consequent anæmia. The operation for relief is usually accomplished without much trouble. Until recently it was advised to let an intra-uterine fibroid alone, but in such cases as the one related it is well to remove them. Dr. Peaslee is in the habit of using a double tenaculum which shuts together; it is introduced closed, and is then opened, and when closed seizes the tumor firmly; a few minutes' traction will then usually cause the extrusion of the mass, as the tissue of the uterus is relaxed in this class of cases; enucleation can then be readily accomplished. Since the case reported to the Society last spring, he has removed in this manner three tumors, and in neither of the cases was there any hæmorrhage. Dr. Peaslee always ensures thorough cleanliness to prevent septicæmia by the use of carbolic acid injections. The capsule in these cases usually atrophies, and does not come away as in the case of Dr. Giebeson. Involution is ordinarily accomplished in three or four weeks.

OVARIOTOMY—DEATH.

Dr. Peaslee presented a specimen and related the following history. Two weeks ago he performed ovariotomy. The tumor was a monocyst of the left ovary. There were but few slight adhesions, and the tumor was easily removed. The pedicle was ample, and was secured by ligatures, they being placed full three-quarters of an inch from the end of the pedicle, so that there should be no liability of them slipping. Before closing the wound while pushing away the intestines, he noticed that the assistant, who was holding the pedicle, made rather more traction than was necessary, and cautioned him not to draw so much upon the pedicle; and again, while cleansing the pelvis of blood, he found it necessary to warn the assistant of the undue traction being made. However, before closing the wound, he examined and found the ligatures tight and no hæmorrhage occurring. Having satisfied himself that all was secure, the wound was closed as usual. Dr. Peaslee was obliged to leave soon after in the train. The patient rallied soon, but, as she complained of a little pain, the attendant administered one-quarter of a grain of morphia subcutaneously, soon after which she became insensible, and died six hours after the operation.

An autopsy was made, and word sent to Dr. Peaslee that the patient died of hæmorrhage which resulted from the slipping of a ligature. When, however, Dr. Peaslee received the specimen, consisting of the uterus, right ovary, and the pedicle, he found that the ligature next to the uterus was not displaced. The location of the outer ligature was covered with a large clot which was traced to a rent in the peritonæum to the left of the ligature, but ligatures were tight, and had not been moved. In the rent in the peritonæum was found a pleplus of veins from which the hæmorrhage had occurred. The rent was probably made at the time of the incautious tractions, and the fact that it was not discovered was because it probably did not take place until just before the wound was closed.

About one quart of blood was found in the pelvis at the autopsy, and that was venous in character. Had the flow proceeded from an artery, it is probable there would have been a greater amount of hæmorrhage in the same length of time.

Dr. Peaslee further stated that he had employed altogether sixty-six ligatures in securing the pedicles of his cases, and has never lost a case by slipping of the ligatures. Solly, somewhere about 1824, mentioned a case in which the pedicle shrunk entirely within the ligatures, which he found by post-mortem experiment to be due to the elasticity of the pedicle, which had been stretched probably at the time of the application of the ligature.

Dr. Byrne suggested that a rupture of some large vein might have occurred without traction, as happens in hæmatocele from rupture of the utero-ovarian plexus. We know that many times the veins in these cases have exceedingly attenuated walls.

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

REPORTED BY JAMES V. INGHAM, M.D., SECRETARY.

STATED MEETING, FEBRUARY 1, 1872. DR. WM. GOODELL, PRESIDENT, IN THE CHAIR.

DR. WM. GOODELL read for DR. W. C. PERKINS the following history of a

CASE OF EXTRA-UTERINE FŒTATION, LASTING THREE MONTHS BEYOND TERM.

On May 20, Mrs. K., aged 31, the mother of three children, came to my office to consult me about some uterine trouble, for which she had been under the treatment of another physician, who had "burned off some ulcers." I found her very anæmic, thin, and much reduced by pelvic pains, loss of appetite, and general malaise. The cervix was soft and flabby; the uterus enlarged, but I could discover no ulceration or inflammation, although there was a dark discharge from the vagina. On two separate occasions I repeated these examinations with like results, but did not venture to use the sound, as she had been informed by her previous medical attendant that she was pregnant. On May 29, with but very few pains and with scarcely any hæmorrhage, she expelled a globular mass, which her mother brought to my office on the supposition that it was an aborted ovum. It seemed to be a mass of apparently solid flesh, pale in color, and felt like a small placenta; but on a more minute examination I could detect neither cord nor point of attachment, and thought, therefore, that it was a blighted ovum. On the 30th of May I was sent for in the middle of the night, and found her suffering from every symptom of peritonitis. Under appropriate treatment this passed away in about ten days. On June 14 she was again attacked in a similar manner, and, in addition, by what seemed to be a pelvic hæmatocele, as upon a vaginal examination there appeared around the cervix a soft swelling exquisitely sensitive to the touch. Her condition was at this time truly critical; the pain was agonizing, the pulse weak, threadlike, and above 150; there was high fever, attended by frequent and very alarming collapses. She, however, revived out of this, but was still very feeble and prostrated, suffering from constant pelvic pains, which were kept only bearable by large doses of morphia.

Feeling the need of additional advice, on July 6 I called in Dr. William Goodell, who, after being informed of the supposed abortion in May, proceeded to make as careful an examination as the exquisitely tender vagina and abdomen would permit. He found the cervix immovable, the os patulous, the roof of the vagina hard, hot, and excessively sensitive, the abdomen tympanitic, the fever of high grade, and an irregular pelvic tumor projecting very decidedly towards the left iliac region. In view of all these symptoms, he pronounced the case to be one of perimetritis. Under treatment the symptoms again subsided, leaving in the left groin a large, irregular tumor, which was excessively painful to pressure. Upon an examination per vaginam, always unsatisfactory from the extreme tenderness, a tumor could be felt encircling the left side of the uterus, as far front as the median line and back to Douglas's cul-de-sac. On July 14, she was seized with another attack of violent pain, fever, and collapse of all the vital forces. I then called in Dr. D. H. Agnew, who diagnosed the case to be one of pelvic cellulitis. A second tumor now began to develop in the right groin, which acted precisely like that of the left. After a long and tedious illness, attended with repeated attacks of violent pain, fever, and collapse, she slowly began to mend. These tumors apparently subsided, but another one began to show itself in the median line.

Quite puzzled by these symptoms, on August 30 I called in Dr. J. S. Parry, who at once placed his ear upon the abdominal tumor, and, to my great surprise, detected a remarkably distinct fœtal pulsation and a remarkably loud placental bruit. Dr. P. thereupon pronounced the case to be one of simple pregnancy seven months advanced, and thought that all the previous violent symptoms and attacks had not been inflammatory, but hysterical. At that time he found the position of the os uteri normal for that period of pregnancy, and so was also the development of the uterus. He accounted for the abortion in May by the theory of a twin conception, and the casting off of one of the ova. After this discovery I quietly awaited events, fully expecting the labor would take place by the middle of November at the furthest. Meantime, she still suffered from violent attacks of pain, fever, and prostration. When December arrived with no sign of labor, and when, after repeated examinations, I could no longer find the os uteri, I began to fear that something was wrong. I forgot to state that on the 29th of November Mrs. K. accidently ran against the sharp corner of a table, receiving a very severe blow on her right side. From this time she no more felt the movements of the child, although before this accident they had been unusually strong. Nor could I detect any longer the fœtal pulsations, which hitherto had been very distinct.

About the middle of December, fully three weeks beyond the expected time of her confinement, her friends became clamorous to have me induce labor. This, however, I declined to do; but finding that her strength and appetite were failing daily, and that she had had night-sweats, in January 13, 1872, I again sent for Dr. Goodell. He found the vagina filled up by a large tumor in the Douglas cul-de-sac, containing fluid, in which he thought he could feel the body of a fœtus. Squeezing his whole hand past this obstruction with great difficulty, he discovered the long-lost os uteri, situated at least three inches above the superior aspect of the symphysis pubis. He now decided the case to be one of extra-uterine fœtation, and asked for additional counsel. Accordingly, on January 15, Drs. Goodell and Parry met me at the house of the patient. Under ether, a careful examination revealed a large cyst occupying the pelvis and Douglas's cul-de-sac, soft and fluctuating. The os uteri was high up above the pubes, as before stated, feeling like a puckered hole. The finger was introduced as far as the second joint, but did not reach the fundus. The cervix was entirely effaced, but the surrounding tissues, being neither bulging, soft, nor velvety, were utterly unlike those of pregnancy. The fœtus could be detected through the walls of the abdomen, but not through the vagina. It was immovable under taxis, and very different in feeling from one contained in a uterus. In order to confirm the diagnosis, a long exploring needle was pushed into the vaginal tumor, and the fluid collected gave the unmistakable odor of liquor amnii.

It was proposed, in case my patient grew worse, to open the cyst from the vagina and deliver the child in that way, but all operative interference was refused by herself and friends. At my next visit I was surprised to find her very much better. She was sitting up and talking with her friends most of the day. The following night, however, she was, as before, full of pain, suffering, and restlessness, with a slight dribbling of the liquor amnii from the small puncture. From this time she had constant pain, high fever, great prostration, and, finally, died on the 21st inst. from extreme exhaustion.

Dr. Parry remarked that before he exhibited the specimens he wished to add a few words to the clinical history which had just been read. When Dr. Perkins asked him to see this patient, on the 30th of August, the case struck him as being very peculiar. There were two symptoms which especially attracted his attention. The first was the superficial situation of the fœtus. When he placed his hand upon the fundus of the abdominal tumor, he felt a body recede from beneath his fingers, and afterwards strike them again, producing a sensation identical with that of ballottement. This was the first symptom which made him suspect the existence of pregnancy. The second symptom, the remarkable intensity of the placental bruit, has already been alluded to by Dr. Perkins. He had never heard it so plainly, though he had examined many pregnant women in the Philadelphia Hospital. At the same time the sounds of the fœtal heart were remarkable. He certainly never heard them so intense at the seventh month, or even at full term. The heart was heard in the usual position.

He also believed it to be worthy of remark that at this time the abdominal tumor presented no peculiar features. It was continuous with the uterus, and movement imparted to the fundus of the tumor was felt by the finger in contact with the os uteri, which seemed rather small for the seventh month of pregnancy. He was somewhat surprised to find himself unable to feel any part of the child through the vagina, a fact which was attributed at the time to the extreme pain produced by the examination. These peculiarities all impressed him, and he was unable to explain them at the time, but aside from these there was nothing in the physical signs which would lead to the suspicion of extra-uterine pregnancy.

Autopsy.—The abdomen was the only portion of the body examined. It was about the size of that of a woman at full term, and very dark in color. Upon section the connective tissue, muscles, and all the tissues beneath the skin were intensely black, but not gangrenous. A large tumor filled the cavity, pressing the liver and intestines upwards. The latter were almost hidden beneath the ribs and on the left side. Below, the tumor dipped down into and filled the pelvis. The anterior abdominal wall was easily and smoothly stripped off the anterior and lateral surfaces of the cyst. There were no adhesions whatever, and the parietal layer of the peritonæum was smooth, and, aside from its dark color, healthy in appearance.

At the lower portion of the anterior wall of the cyst was the body of the uterus, from either side of which ran the broad ligaments and the fallopian tubes, to be gradually lost in the surrounding tissues. The remainder of the anterior wa of the cyst was made up of the omentum, which was adherent to the fundus of the uterus. The external surface of the omentum was smooth and free from lymph, as was also that of the uterus and adjoining tissues.

Upon opening the cyst, a considerable quantity of dark colored but otherwise not abnormal liquor amnii flowed out, and a fully developed male child was found lying across the abdominal cavity, with its hand towards the left side. It had evidently been dead for some time, as it was dark-colored, and the cuticle was commencing to peel off. The placenta, unusually large and elevated, lay just above the crest of the ilium, partly over and partly to the right of the spinal column. It was very large, and beneath it was an immense decolorized coagulum of blood, nearly three inches thick. This was easily separated from the abdominal wall, leaving a clean but slightly roughened surface, while the placenta was intimately adherent to and extremely inseparable from the clot of blood. The cord was small, shrivelled, and attached to the extreme upper margin of the placenta.

The uterus was about five inches long. The os was carried far above the pelvis, as described in the history. The cavity of the organ contained no decidual membrane, and, aside from a little redness, its lining membrane presented no abnormal appearance.

The fimbriated extremities of the fallopian tubes were lost in the tissues upon either side and could not be recognized in the dissection. The ovaries were carefully sought, but were not discovered on any part of the cyst wall. All these tissues were stretched thin, and insensibly blended together. The bladder was not enlarged, and its lining mucous membrane was entirely healthy.

Dr. William Goodell stated that he wished to supply an inadvertent omission in the interesting history of Dr. Perkins's patient, which gave him (Dr. G.) far more credit than he deserved. It was a second trip in diagnosis—for he had made two in this highly instructive case. This last error he was anxious to note, because he thought it would materially assist others in the diagnosis of these puzzling cases.

Exactly six months after his first visit, and five weeks after the death of the fœtus, on January 4th, he was called in a second time by Dr. Perkins, in order to discover what had become of the os uteri, and to decide as to the propriety of inducing labor. At this time, finding the vagina blocked up by a fluctuating tumor, in which he thought he could feel the limbs of a child, and finding, also, the os uteri situated very high above the pubes—in fact, almost under the umbilicus—he had pronounced the case to be one of retroversion of the gravid womb, caused by firm adhesions at the fundus. So perfect was the illusion, and so confident was he of the correctness of this diagnosis, that, at a third visit (January 14), he attempted to introduce a flexible catheter into the uterus, in order to start labor-pains. His inability to pass this catheter very far up gave him the first hint that he was dealing with an extra-uterine fœtation. In reading up the literature upon this subject, he was struck with the frequency of this condition of apparent retroversion; a symptom which had misled numerous excellent obstetricians. For instance, in a strikingly analogous case, published in the twelfth volume of the *London Obstetrical Transactions*, Dr. J. Hall Davis attempted to raise up the fundus of the apparently retroverted womb, and, failing in this, introduced successively into the os uteri a sponge-tent and Barnes's dilators. In this case, the extra-uterine fœtation was not discovered until an autopsy was made, indeed it was not suspected, although the woman was eight months gone.

With regard to the placental apoplexy of old date, which Dr. Parry had pointed out, he accounted for it by the violent blow received late in November, when the lady ran against the corner of a table. The jar had undoubtedly detached the placenta, and had caused a concealed hæmorrhage, from which the child had perished; for, from that time, no signs of fœtal life were present. The remarkably great size of the placenta he attributed to the *error loci* of this organ; for, in the nourishment of so large a fœtus, a very large vascular area could alone compensate for the absence of vast uterine sinuses. In looking back upon the clinical history of this case, he was now satisfied that the supposed blighted ovum expelled in May, which had mystified him so completely, was nothing more or less than the exfoliation of the decidua uterina. In all extra-uterine fœtations this membrane, he believed, is invariably formed and usually cast off in shreds; but he would much like to have the experience of the members present with regard to the frequency of this expulsion of the whole decidua in one mass. He wished also to hear whether others had noticed the condition of apparent retroversion.

There was another point omitted in Dr. Perkins's paper, which he (Dr. G.) deemed of sufficient importance to relate, and that was the periodicity of the attacks of pain, fever, and of collapse. Mrs. K. had not seen her catamenia since the expulsion of the decidua, but up to that time they had appeared at intervals of about three weeks. Now, these attacks of extreme suffering corresponded in time with her previous catamenial periods, and were therefore possibly due to the congestion induced by the menstrual molimina. Such a periodicity, he thought, might have some diagnostic value in discriminating this very fatal and extremely unrecognizable accident of impregnation.

Dr. Jenks spoke at length upon the implantation and the development of the placenta. He also described the development of the fœtus in ovarian pregnancy, and called the attention of the Society to Dr. Greenhalgh's method of killing the fœtus in three cases of extra-uterine fœtation by injecting a solution of morphia into the cyst.

Dr. A. H. Smith mentioned two cases of extra-uterine fœtation that had occurred in his practice. In the first, a seven months' fœtus was extracted through the walls of the vagina, by Dr. D. H. Agnew. The patient died a few days later of peritonitis.

In the other case, extra-uterine pregnancy was not suspected until revealed by an autopsy, the patient having died from peritonitis following an attempt to restore a supposed retroverted uterus to its normal position. In this case the decidua was cast off entire, but it was mistaken for that of an ovum expelled early on account of the supposed uterine displacement.

Dr. J. G. Allen thought that extra-uterine fœtation was far more frequent than is generally believed. He felt certain that he had met with at least three cases. In 1863, he attended a woman for peritonitis, caused by an induced abortion. In 1869, she attempted to produce another at about the second month of pregnancy, but failed, although she described something resembling a decidua as having been passed, and for a time supposed herself relieved. Soon afterwards she called upon him, complaining of an incessant desire to urinate. This was two and a half or three months from the time of supposed conception. He found a considerable tumor behind the uterus, but unattached to it; he had great difficulty in passing the uterine sound. The os uteri, or rather the anterior lip, was readily exposed by the speculum, but the body was carried forwards and far upwards behind the pubes. The sound had to be strongly curved, and then it entered five inches. Finding the uterine cavity empty, he believed it to be a case of extra-uterine fœtation, which diagnosis was concurred in by Drs. Agnew and G. Pepper. The latter gentleman was much interested, and examined the patient several times. Later he could by ballottement feel assured of the presence of a fœtus. They (Drs. Allen and G. Pepper) then determined to try and destroy it by means of the galvanic current. One pole of an ordinary electro-magnetic machine was passed through a common glass speculum, and applied to the vaginal portion of the tumor, behind the neck of the uterus. The other pole was placed upon and over the tumor, when it could now be felt in the abdomen. This was repeated on several occasions. A weak current was first used, producing no visible impression. On the third application, a very powerful current was turned on. In a few moments the patient recoiled from the current with considerable fright, declaring she felt a motion as of something turning over in the abdomen. The current was then somewhat moderated, but continued for full five minutes more.

A moderately strong current was afterwards applied in the same manner, every three days, for a period of about two weeks. The tumor, which had hitherto been rapidly increasing, first ceased to grow, then gradually for several months diminished; all sense of anything like ballottement disappeared. At the present time—three years after the occurrence—there is a well-defined tumor about the size of a large fist, which can be felt per vaginam, but which gives no trouble whatever. Previous to the use of the battery, she suffered greatly from abdominal tenderness and occasional colicky pains. Dr. Allen had also another very similar case in 1870, which at about the tenth week of supposed gestation was treated in the same manner, with very similar results. In this case, however, nothing like ballottement was ever detected, and the application of the galvanic current produced no sense of motion in the tumor, which, however, gradually diminished from the size of a large fist to that of a goose's egg, in which condition it still remains, giving no trouble.

The third case was a colored woman, in whom there was a cessation of the menstrual flow and an apparent increase of the size of the uterus for seven months. She supposed herself pregnant, and engaged Dr. Allen to attend her. No examination was made at this time, as the patient complained of nothing abnormal till after the sixth month. She then became subject to violent attacks of colicky pains and great abdominal tenderness. A tumor of proper shape and size for her supposed condition could be readily felt in the abdomen; extra-uterine pregnancy was not suspected. After seven months had elapsed, the apparently enlarged uterus decreased in size, followed by a bloody discharge per vaginam; this occurred irregularly every few weeks, each attack resembling a very painful menstrual period. Dr. Allen now made a special examination, and passed the uterine sound five or six inches. A tumor could be detected, apparently in some manner connected with the uterus, which caused him to think it a fibroid growth. Subsequently she improved; the size of the abdomen still further decreased, and she left the city. Some months later he heard that she had been very sick, had passed fœtal bones per vaginam, and finally died. An autopsy was made by the attending physician, of which, however, Dr. Allen had no professional account. The mother of the patient has, however, shown him various fœtal bones that were removed at the post-mortem examination.

Dr. Packard exhibited a "safety diaper pin," two and a half inches in length, that had been swallowed by a child ten months old, and after ten days was passed per anum.

STATED MEETING, MARCH 7, 1872. DR. WM. GOODELL, PRESIDENT, IN THE CHAIR.

Dr. Parry presented a specimen of primary cancer of the vagina, occurring in a patient, the mother of four children. When she was admitted to the wards of the Philadelphia Hospital in June, 1871, she complained of no especial trouble, nor did her appearance indicate any serious disease. Soon after admission, however, a profuse hæmorrhage from the vagina occurred, followed by the rapid appearance of the cancerous cachexia.

A careful examination revealed a tumor involving the recto-vaginal septum; it was ulcerated and hæmorrhagic. The os uteri was but slightly affected. The patient after repeated hæmorrhages sank from exhaustion, and died on the 10th of February, 1872. At the autopsy the tumor was found to have only involved the vagina, ulcerating through into the rectum, and almost through the upper posterior wall into the peritonæum. The body of the uterus presented no evidence of disease. There was a very slight ulceration of the os uteri. The external genitals were not affected, and the bladder was also free from disease.

He then spoke at some length upon the extreme scarcity of primary cancer of the vagina, and stated that he had never before met with a similar case.

Dr. Jenks stated that when he first saw the patient at the Philadelphia dispensary, before she went to the hospital, she complained of nothing except the occurrence of a hæmorrhage from the vagina. Previously to this she had suspected nothing. He at that time discovered the thickened and ulcerated posterior vaginal wall, and an examination per rectum revealed the existence of a small tumor occupying the recto-vaginal septum.

Dr. Goodell mentioned a somewhat similar case that he had reported two years ago to the Society. It was an erectile cancroid of the vagina, but there was no disease of the uterus (American Journal of Obstetrics, May, 1870, p. 180).

Dr. Goodell exhibited to the Society an extremely ingenious instrument for vaccination, that had been devised by Dr. Dawson, of New York. Dr. Goodell spoke very favorably of its operation in actual practice, especially on children.

QUARTERLY REPORT ON OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

Chronic Cystitis in the Female. By Thomas Addis Emmet, M.D., Surgeon to the New York State Woman's Hospital, N. Y. (*Amer. Practitioner*, Feb. 1872.)

During the winter of 1858, I removed, through an artificial opening made in the vesico-vaginal septum, a calculus from the bladder of a patient in the Woman's Hospital. She had been an inmate of the institution several years before with a vesico-vaginal fistula, which had been closed previous to her discharge. As the bladder was in a diseased condition, by the advice of Dr. Sims the artificial opening was left for the greater facility afforded in the treatment for restoring the organ to a healthy state. This idea was a new one to me at that time, and to Dr. Sims, I believe, is due the credit of the mode of treatment for cystitis in the female resulting from this cause. For the relief of a case of chronic cystitis following exposure, and of long standing, I subsequently made an artificial vesico-vaginal fistula, with the view of giving rest to the organ by the free escape of urine. It was thought that by thus removing the exciting cause of the persistent tenesmus, the hypertrophy of the walls of the bladder would subside.

This operation and view of treatment was considered original, and during the past nine years it has seldom happened that some case has not been under treatment by this method in the Woman's Hospital.

Prof. Willard Parker, of this city, presented, at the annual meeting of the New York State Medical Society for 1867, a paper on "Cystitis and Rupture of the Bladder, treated by Cystotomy," which was published in the *Transactions* for that year. The doctor states that, on January 3, 1846, he performed lithotomy on a male. He was unable to remove the stone, but the cystitis was relieved by the free escape of the urine through the opening. At the end of three months a fresh attack of cystitis came on, the kidneys became involved, and death resulted. This case seems to have been instrumental in drawing his attention to the subject. He mentions performing the same operation subsequently, but the history of the case and result is imperfect beyond the statement that "in a few months he had nearly recovered, and some months after he called upon me, and looked as well as any one could at his time of life."

November 23, 1850, Professor Parker operated at Bellevue Hospital on a case of chronic cystitis in the male. He states: "The object in view was to open a channel by which the urine could drain off as fast as secreted, and thus afford rest to the bladder, the first essential indication in the treatment of inflammation." The conception of treatment was perfect, and there has been no advance made since in the pathology. The patient died in a few days, and the autopsy revealed the fact that the kidneys had undergone degeneration. This case was published in the New York *Medical Journal*, for July, 1851, Vol. VI., and reported at length by Stephen Smith, M.D., assistant surgeon to the hospital. Although a favorable result was not obtained, it clearly establishes Dr. Parker's claims to priority for this mode of treatment of cystitis in the male. Previous to the reading of this paper before the State Society in 1867, I had been ignorant, however, of his views on this subject; and it is only a short time since that I have been able to obtain a copy of the journal containing the history of the case. Prof. Eve, of Nashville, reports the benefit derived from this mode of treatment in the male, after an operation performed in 1866, and the case is presented in Dr. Parker's paper.

At the last meeting of the State Society, February 7, 1871, Dr. Bozeman presented an interesting paper on "Urethrocele, Catarrh, and Ulceration of the Bladder in Females," which was published in the New York JOURNAL OF OBSTETRICS for February, 1871.

Dr. Bozeman details the history and successful result of an operation for the relief of cystitis performed January, 1861, the artificial opening having been closed the following June. The patient was cured, and nine years after the operation had had no return of the disease. It is stated: "To Prof. Willard Parker is due the suggestion of opening the male bladder for the relief of catarrh, and this encouraged me to extend the practice to the female bladder, as I have described. Dr. Emmet and other American surgeons have *since* adopted the practice in case of vesical catarrh in the female, and I doubt not with equal success." . . . "Delay in the report of my case of ulceration was due to the suspension of all medical journals in the South during the war," etc. This statement is unfortunately calculated to give the impression that the American surgeons who have practised this mode of treatment since 1861 were indebted to Dr. Bozeman. With all due credit, this is not correct, as until his paper was presented he had given the profession no opportunity of knowing that he had ever operated. He has certainly not done justice to himself in so long delaying his claims; for he could scarcely be ignorant that this had been the practice at the Woman's Hospital, previous to and from the time of his coming to New York immediately after the war. I may also state that several cases of cystitis treated by this plan are detailed in my work on "Vesico-Vaginal Fistula," published in July, 1868, and to his pen I have always accredited a flattering review of the book in one of the journals of this city.

Since the case referred to, from which the stone was removed in 1858, this mode of practice has been followed in similar cases, and the principle fully recognized. During the summer of 1861, I operated for the first time on a case of chronic cystitis in the female. The opening soon closed, and no improvement in the condition of the patient took place. I shortly afterwards made a larger opening, through which the urine freely escaped. Ten months later, I closed the artificial opening, as the thickened condition of the bladder had then disappeared. I have never seen a case of disease of the bladder as extensive as this was, without the existence of any kidney complication. The mucous membrane of the bladder had, to a great extent, been lost, and the walls had become so hypertrophied that the bladder, as a hard mass, could be felt contracted behind the pubes, and was exceedingly tender on pressure. This case had been of many years' standing, and her suffering had made a wreck of both body and mind. She came under my observation frequently, until some two years ago, since which time I have lost sight of her; but I can vouch for the fact that the bladder had remained in a healthy condition for eight years after the operation. I regret that the notes of this case, as well as of several others, which occurred in my private practice, should have been lost.

At a meeting of the New York Obstetrical Society, held by invitation of Dr. L. A. Rodenstein, in December, 1870, I presented the history of a case which I had just operated upon, by making an incision transverse to the axis of the vagina, and in which an excessive hæmorrhage had occurred. Among the invited guests present was my friend, Prof. James P. White, of Buffalo, who, in some remarks addressed to the Society, reminded me that he had assisted me at the operation in 1861, and, by a curious coincidence, was, I believe, present at the final closure.

During the autumn of 1862, shortly after her arrival in this country, an Englishwoman, suffering from chronic cystitis, was admitted into the Woman's Hospital. She refused to submit to any surgical procedure, and shortly afterwards died, in consequence of the diseased condition of the kidneys. I mention this patient's case because she had been for some time under the care of Sir James Y. Simpson, previous to leaving Great Britain, and the chief objection made to the operation was that so high an authority as Prof. Simpson had never intimated the necessity for such a procedure. The credit of this mode of treatment has lately been claimed for Prof. Simpson by Mr. Lawson Tait. Whether the idea after this date occurred to him, or that he was really indebted to this country for it, is of little bearing; but by this case the fact is proved that previous to the summer of 1862 he was ignorant of the method, and treated his cases simply by injections into the bladder.

Cystitis is of frequent occurrence from the too early closure of a vesico-vaginal fistula, resulting from parturition, and before the tissues have regained a healthy condition, or as a result of failure in the operation to approximate perfectly the edges along the bladder surface, and thus leaving some denuded portion exposed to the action of the urine. I have operated some fourteen times for the removal of calculi from the female bladder. Nearly all these cases had been operated on for the closure of a vesico-vaginal fistula by other surgeons or by myself. In nearly every instance the cystitis was of sufficient extent to necessitate leaving the opening unclosed after the removal of the stone. In the worst cases means were adopted to keep the opening patulous; in others of a milder character the same treatment was followed of washing out the bladder several times a day as long as the injection could escape by the vagina. I believe in every instance the opening closed within two weeks where no means were employed to prevent it, and often it would do so in nearly the same time, notwithstanding efforts to keep it open. These cases recovered ultimately, I believe without an exception, although in several instances where, on account of the urging of the patient, the opening had been closed too soon, the operation had to be repeated.

This operation is not advocated in all cases of the cystitis, for it is a fortunate experience that a large number, if seen early, will readily yield to treatment. The necessary step in the beginning for success is, if possible, to recognize the exciting cause, that we may not lose time by treating the symptom alone. Neglect during labor to keep the bladder empty, exposure to cold, violence, and the habit of long retaining the urine, are the chief exciting causes of the most serious forms of chronic cystitis.

As some of the causes of irritability which may result in chronic cystitis, we may enumerate the different forms of dyspepsia from chronic derangement of the digestive organs, pressure of the uterus, and diseases of the rectum. With enlargement of the uterus, and partial or complete laceration of the perinæum, this organ settles down on the floor of the pelvis, and by traction along the base of the bladder to the urethra chronic irritability of the bladder is frequently established. Retroversion of the uterus also, by which the cervix is thrown forward or upward, may excite the same condition. The existence of urethral polypi or other growths and ulceration of the canal must not be overlooked. It is necessary always to examine the condition of the rectum; for the presence of hæmorrhoids will keep up irritation of the bladder as well as an unsuspected fissure.

I once gained great credit for the relief of an intractable case of irritable bladder, by accidentally discovering a fissure of the anus, and healing that by lacerating the sphincter. This patient had been under the care of several excellent practitioners, who had treated the uterine condition with the idea that the bladder difficulty was due to it. There was no indication of any rectal trouble beyond the existence of habitual constipation, and after a movement of the bowels the pain in the bladder was excruciating. She had suffered for years with dysmenorrhœa, and the uterus was both enlarged and anteverted. After the fissure was healed, the irritability of the bladder subsided, and without additional treatment the dysmenorrhœa ceased, and the uterus gradually lessened in size. It is often necessary to use some form of pessary, by which the neck of the uterus will be lifted up from the floor of the pelvis, even if it is anteverted by so doing, and the instrument should be so curved in front that all pressure at the urethra will be avoided. Irritation of the bladder is often excited by the relaxed condition of the upper portion of the vagina, which allows of chronic prolapse of the uterus. For its relief some modification of the operation for procidentia, by which the excess of vaginal tissue may be turned in, must be resorted to. With partial or complete laceration of the perinæum, causing cystocele or rectocele, the appropriate operation on the vaginal wall will be necessary, as well as closure of the perinæum.

So many causes exist by which a continued irritability of the bladder may be kept up until chronic cystitis has become established, that it would be impossible to enumerate them at greater length. In the local treatment of the bladder, the main dependence for relief rests in the frequent and proper manner of washing out the cavity. This operation the surgeon should perform himself if possible, using simply warm water in large quantities, to be injected with great care through a double catheter. After the injection, if the pain has been increased, it will be diminished greatly by a solution of morphine thrown into the bladder. Although the absorbing power of the bladder is very limited in a healthy state of the organ, yet in this condition it is sufficient; for such treatment is often more efficacious than the use of suppositories, or anodyne injections into the rectum. When the injection of water cannot be borne without increasing the irritation of the bladder, or when there has been no marked improvement in the case after a reasonable time, the operation for establishing a fistula must be resorted to. The patient should at least be given the option, with a reasonable expectation of success on the one hand, or on the other inevitable death from disease of the kidneys; and the surgeon fails to perform his duty who does not present the case to the patient in this light. Unfortunately the disease is so insidious in its character, that either relief is not sought until the condition of the bladder has become complicated, or the patient cannot realize the danger with the necessity of resorting to any surgical procedure.

. . . .

The operation, as practised for the relief of cystitis, is in itself a simple one; and if resorted to before the disease has advanced so far as to involve the kidneys, is as free from risk as any in minor surgery. Even under the more unfavorable circumstances the risk of the operation is justifiable; life may be prolonged, and a great degree of comfort obtained, in allaying the persistent efforts to empty the bladder.

To the effects of the anæsthetic I attribute the chief danger attending the operation in the advanced stages of the disease, while from the irritable state of the bladder its use is indispensable. As the kidneys are barely able to perform their function sufficiently well to preserve life, the balance is easily lost in the attempt at elimination, and death from uræmia rapidly takes place. It has been denied that the kidneys take any active part in the elimination of ether from the blood, but I am convinced that this view is incorrect. I have often detected the smell of ether in my own urine hours after I had performed some prolonged operation where it had been administered to the patient. I have had no experience with the use of any other anæsthetic in this condition, but on theoretical grounds would consider the use of the nitrous oxide gas as the least objectionable, and particularly as the operation is one of so short duration. Unfortunately we cannot judge in any case of long standing as to the actual condition of the kidneys, so that the consequences which may follow must be fully appreciated both by the operator and the patient.

Many objections have recently been made to surgical interference in these cases of chronic cystitis. While the chief danger in relation to the state of the kidneys has been entirely overlooked, the exceptions taken have been based wholly on theoretical grounds, with really no foundation in practice. We are all aware that most plausible objections may be made against any operation in surgery, and that the most simple in character is not free from danger under all circumstances. This operation may be regarded as an innovation, but experience has long since taught that it is founded on correct principles. The advance which will be made in the future will be an appreciation of the necessity for an early resort to its performance, before delay has placed a comparatively simple condition beyond the scope of any remedial means yet known to the profession.

In my work on "Vesico-Vaginal Fistula" I describe the mode of operating on page 43, and give the history of a case where the same operation was performed for the removal of a stone from the bladder. An anæsthetic was administered, the patient placed on the left side, and Sims's speculum introduced. Then "a sound, somewhat abruptly curved an inch and a half from its extremity, was introduced through the urethra.

While held by an assistant, with its point firmly pressing in the median line against the base of the bladder, a little behind the neck, the protecting tissue on the vaginal surface was seized with a tenaculum, and divided by a pair of scissors directly on the point of the sound until it could be passed through into the vagina. With the sound remaining in the opening as a guide, one limb of a pair of scissors was passed alongside into the bladder, and the vesico-vaginal septum divided backward in the median line. By this mode, especially where the vagina is of the natural size, the operation is extremely simple, and is completed in a few minutes. The object in cutting on the point of the sound is to be sure that the bladder and the vaginal surface are divided in correspondence, for there is so much mobility of one surface over the other that it is exceedingly difficult to enter the bladder unless the parts are transfixed. I have frequently closed the opening immediately after removing a stone, as in the operation for fistula, with the same after-treatment. In this case, however, I determined to leave it open a year for the relief of the chronic cystitis, as the bladder would thus be kept empty, and the chief source of irritation consequently removed; by remaining at rest it would gradually recover its tone." "I directed that the bladder should be washed out several times a day with large injections of warm water, slightly acidulated by adding a few drops of nitric acid, as the most direct way of correcting the alkaline state of the urine, due to the condition of the bladder itself. After three months' treatment the patient had improved so much, and was so anxious to return home, that on the 20th of June I reluctantly closed the fistulous opening, using eight sutures, which were removed on the following day. July 20, 1866, she returned home apparently cured of the cystitis, and able to retain her urine without difficulty during the night. It remains to be seen whether the opening was closed too soon, for with a recurrence of the inflammation the calculus will form anew."

This woman was well some months after leaving the hospital, and promised to return at once in case of any recurrence of irritation of the bladder. As she has not done so, I am fully satisfied that she has remained well.

The mode of operating, as described, can be but little improved upon from its simplicity. The median line has been preferred for the direction of the incision, as for all practical purposes the course is free from blood-vessels of any magnitude, without the opening be extended too near the cervix or to the neck of the bladder.

Dr. Bozeman, in the paper already referred to, describes his method of operating as follows: "To give them free vent (the morbid products constantly accumulating), an aperture the size of *half a dollar* is made into the bladder through the vesico-vaginal septum, just above the vesico-urethral orifice. When the patient is placed in the knee-chest position, and my self-retaining speculum introduced, the operation is done without an assistant, and with the greatest despatch. A pointed knife with a narrow blade, a curved scissors, and delicate tenaculum suffice. First pierce the septum at the point indicated, then cut right and left at least half an inch each way. With the scissors the operation is easily completed, and then the extent of muscular hypertrophy may be ascertained, as well as the condition of the vesical mucous membrane."

The base proper of the bládder may be represented as a triangle, the mouths of the ureters being sitúate at each extremity of the base, and the vesico-urethral orifice at the apex. This triangular space maps out the surface where the bladder and vagina are in the closest contact, being connected elsewhere by loose cellular tissue. Just outside of the line of the ureters, in the sulcus on each side, run the large blood-vessels to and from the lower portion of the uterus and neighborhood. I have made a number of post-mortem examinations of the healthy bladder, both *in situ* and after the removal of the pelvic organs *en masse.* In no instance have I found the distance from the mouth of one urethra to the other, or from either to the orifice of the urethra, greater than an inch, these forming a triangle of equal sides. When disease has existed, and the bladder been long contracted, the distance between these points in all probability would be somewhat lessened. The diameter of half a dollar is one inch and an eighth, while a circle including three points, as I have described, at an inch apart, would have a diameter of a little less than an inch and two eighths. It is very evident therefore that in less skilful hands there would be some danger of removing the mouths of both ureters, together with a portion of the neck of the bladder, and no little risk, at the same time, of cutting into the large blood-vessels laterally, running along the vagina, outside of the bladder.

It is true that in the position recommended the vagina, by the weight of the uterus and by atmospheric pressure, would be fully dilated, and at the same time the distance between the line of vessels would be greatly increased, but no influence could be brought to bear which would increase the distances between the three given points within the bladder. It is true also that in the formation of a fistula, after parturition, we often find as large a slough thrown off from the septum, and the opening resulting remains even much larger than the one proposed by Dr. Bozeman; but the neighboring tissues for some distance beyond the margin of the slough become blended together by inflammation before its separation, and the fistula is afterward increased or diminished in size, as tension may be exerted by the contraction of these tissues.

In theory, there can be no necessity for an opening larger than that which would equal the capacity of the ureters, that the bladder may be thus kept empty. In practice, however, the incision is made larger at first than this indication would call for, from the fact that, with all the care that can be taken to prevent it, the greater portion will close too soon; and at first it is a great advantage to have so free an opening through which the accumulated mucus in the bladder may be freely washed out. The plan of cutting out a small piece is a good one, as the opening can then never entirely close of itself; but to do so would be evidently attended with more risk than the simple incision, even in the hands of an experienced operator.

Various means have been resorted to for the purpose of keeping the artificial opening patulous. In several cases I have used with advantage a hollow glass stud, made from tubing half an inch in diameter, and not unlike a spool in shape, which is buttoned into the slit. The portion of the rim to remain within the bladder requires to be but little more than a slight flare, with the edge turned over, to keep the instrument *in situ;* while the vaginal rim may be larger, to prevent its slipping into the bladder. It will remain loose, with sufficient play to prevent the parts from healing up too tightly around; and for its removal only a pair of forceps is necessary, by which one side may be turned up for the other to escape. I have always made them myself, of the best quality of glass, and have had them remain for weeks undisturbed; yet in some instances, when they have been longer than the thickness of the vaginal septum, a great deal of irritation has resulted. As a rule, I think it advisable at first to rely upon the careful introduction of the finger; but after a few days, when the irritation of the parts has somewhat subsided, and the incision begins rapidly to close, the glass stud may be used with great advantage.

I will now briefly give the history and treatment of several cases in detail, with the view of illustrating some of the difficulties and complications attending. In making the selection, I have intentionally presented some of the cases with which I have had the most difficulty, wishing rather to give prominence to the dangers than to mislead.

I have operated by this method during the past ten years, in hospital and private practice, in some ten or twelve cases of chronic cystitis due to disease of the bladder itself. The number is too small to be of any statistical value, since I have never been able to ascertain the subsequent condition of several patients after their discharge from the hospital; and having no complete records of those treated in private practice, I do not wish to trust to my recollection. It is sufficient for all practical purposes, however, to state that I have been able to keep several cases under observation for a number of years after closing the fistula, and that there has been no return to the cystitis, where death would have resulted long since had this mode of treatment not been resorted to. Experience has certainly taught that, while the operation may palliate at any stage of the disease, the benefit, as I have already stated, will be in ratio to the time of performing it.

I have had but one death follow the operation, the history of which is given in my work on "Vesico-vaginal Fistula," page 237. "Case LXXIV.—Cystitis resulting from cold, of eighteen years' duration, followed by a pelvic abscess, which soon afterward opened into the bladder and vagina. Fifteen months previous to admission incontinence of urine suddenly took place, with partial relief of the cystitis afterward. The vesico-vaginal sinus was enlarged, so as to allow of the free escape of urine. Death from uræmia forty-eight hours after the operation." The post-mortem examination showed the existence of chronic tuberculous peritonitis, the left kidney was enlarged, and sufficiently dilated to contain three or four ounces of fluid, and the ureter on that side was also greatly dilated. The right kidney had been entirely destroyed by tuberculous deposit, which had undergone cheesy degeneration, leaving scarcely a trace of the kidney structure. Her death was due to the effect of ether, by which the diseased kidney became congested above the secreting point.

With the exception of a patient who suffered from an attack of peritonitis, due to accidental exposure a week or more after the operation, I have met with but little difficulty in the after-treatment of other cases, and therefore have thought it unnecessary to extend this paper to a greater length.

REMOVAL OF AN INVERTED UTERUS WITH AN INTRAMURAL FIBROUS TUMOR OF THE FUNDUS, BY ECRASEMENT. With wood-cut illustration. By THOMAS HAY, M.D., of Philadelphia. (*Reporter*, Dec., 1871.)

The patient, Mrs. M. A. B., æt. 32 years, of York, Pa., came under my care April 17, 1871. She was born of healthy parents; has two brothers and one sister—all living. The father's age is 69, and the mother's 61 years.

The patient was married Dec. 12, 1865, and gave birth to a child—a boy—June 14, 1867, eighteen months after marriage. She was taken in active labor early in the morning, and was delivered with forceps the next day at 11 A.M. There was much suffering connected with the labor, but no flooding or hæmorrhage occurred after it. On the twelfth day she sat up out of bed, and in the third week after delivery began to move about.

She nursed the child till it was about 16 months old, some time in the fall of 1868. The menses came on while she was nursing, when the child was five or six months old, and returned at irregular periods, till some time early in the spring of 1869.

The patient never aborted, and was in good health previous to, and during this, her first and only pregnancy.

In the spring of 1869, about five months after she had weaned the child, while menstruating, she lifted a wash-kettle of clothes off the stove, whereupon profuse hæmorrhage suddenly came on, which caused her to take to her bed and remain there for several days.

From the spring of 1869 till the spring of 1870, the menses appeared more regularly, but the flow was excessive, and lasted a week or longer at a time, and were accompanied with forcing pains. During this time, when the effusion was going on, she usually was compelled to be in bed. She was under medical advice, but no examination was made per vaginam, and the treatment employed consisted mostly of remedies given by the mouth.

About the spring of 1870, the hæmorrhage and pains were no longer confined to the menstrual periods. The hæmorrhage was almost incessant, and often suddenly alarming, and the forcing pains more frequent and severe. Her condition became more and more aggravated, till, in December, 1870, she was compelled finally to take to her bed in consequence of an accession of the pains. She suffered agonizing, bearing-down, labor-like pains for twenty-four hours, till "suddenly something seemed to come away," when the severe pains subsided, and in the course of several days gradually disappeared, and gave place to an uncomfortable, heavy, and tensive feeling, confined to the lower abdomen and back, which kept her in bed four weeks. The paroxysm of expulsive pains was followed by retention of urine, and the homœopath who was then in attendance, in his attempts to use the catheter, detected a "retroverted womb in the vagina," and the efforts he made to "replace" the organ were legion.

During and immediately after the paroxysm of greatest suffering the loss of blood was small, and when the patient was up and about the hæmorrhage was not as great as it had been. It however continued till the operation was performed, but the flow was more uniform and less in quantity, except at periodical intervals of about three or four weeks, when it was greatly increased, and continued six or eight days. While she was still confined to bed, a discharge of sanious pus made its appearance from the vagina, and when she came under my care it was profuse. Since her first trouble, the patient had been under the care of several different physicians of her town, and not knowing the real cause of her illness, but fully realizing her critical condition, she sought other advice.

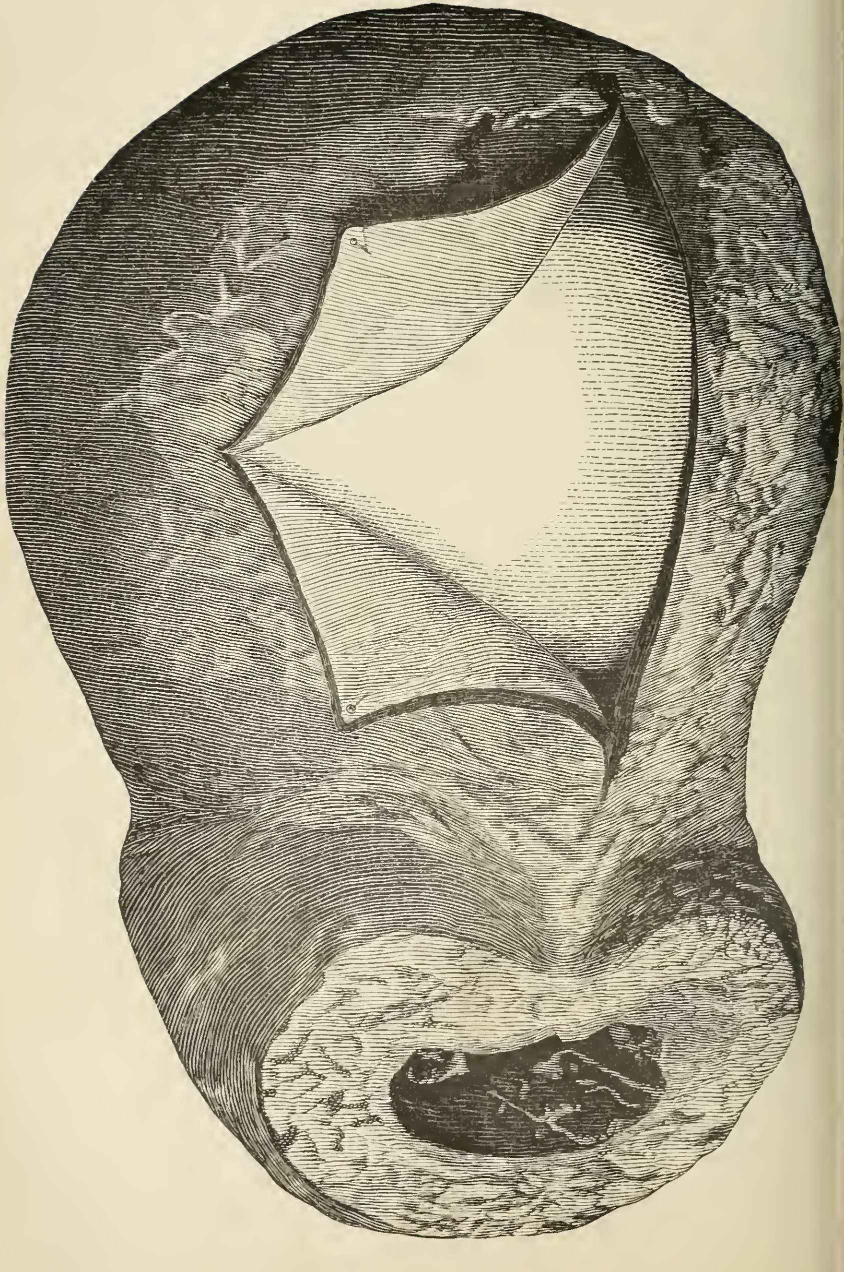
By this time she was almost exsanguinated, and greatly reduced. The discharge of blood and sanies continuing and debility increasing, her physical exhaustion and mental distress were so great that she was anxious to be relieved at any risk.

I made an examination, and found the pear-shaped tumor herewith illustrated. The vagina was so completely occupied by the mass, that a satisfactory examination without anæsthetizing the patient was found to be impossible.

As prophylactic measures against the effects of the use of an anæsthetic and an operation, if one should be performed, which, at this time, I believed, would afford the only chance of life, the patient was put to bed, ice was applied over the lower abdomen, from time to time, and large doses of the muriated tincture of iron were administered.

This plan of treatment was carried out faithfully till the day of the operation. It had a happy effect in greatly controlling the flow of blood, and the patient gained strength and was improved.

She was anxious to have her case determined, and wanted the operation performed, if it was to be resorted to, at the earliest possible day; and on the 8th of May, 1871, fourteen days before the operation was performed, and about five days preceding the menstrual period, anæsthesia was induced by



my friend, Dr. James W. Kerr, of York, Pa., and a careful examination was made. The tumor, projecting downward, and pressing on the perinæum, was found to occupy the entire vagina, which latter was distended upward, and latterly as well as downward.

The tumor could be easily felt in the lower abdomen, and with one hand in the vagina grasping it, and the other pressing upon it in the pubic region, it was found to be movable, and a funnel-shaped opening was distinctly detected in it through the abdominal parietes. Introducing the hand high up into the vagina, the neck of the tumor was found to be surrounded, except anteriorily, by the os uteri, and the sound introduced into the cervix showed a depth of about half an inch.

As will be seen by reference to the illustration, there was no defined pedicle, and, while it was clear we had an inverted uterus to deal with, we could not account for its large size. The surface of the tumor looked fleshy, was rough, abraded, and ulcerated, and slight manipulation of it at any point caused a flow of blood. Mucous membrane could not be detected on it. The tumor had somewhat of a doughy feeling, but it was hard to firm pressure.

The previous history of the case and the signs afforded by the examination left no doubt as to the diagnosis. The absence of the cervix anteriorily was accounted for as having been occasioned by laceration of the os when the fundus passed through it.

The stump of the inverted uterus occupied almost as high a position within the abdomen as the organ does in its natural position, and the sign so valuable in cases of ordinary inversion, afforded by means of the sound introduced into the bladder and the finger into the rectum, and again into the vagina, could not have been of any value in the case, and this expedient was not employed.

On the 22d day of May, 1871, the second day after menstruation ceased, the patient was placed on her back, low down on a bed, with her limbs supported by each foot resting on a chair, and was profoundly anæsthetized, and with the assistance of Dr. James W. Kerr and Mr. McLoughlin, medical student, the uterus was amputated. The chain of the écraseur was placed round the cervix, a short distance below the os, and was tightened very slowly, and fifteen minutes were consumed in severing it. The opening was large, and easily admitted the passage of four fingers at a time into the peritoneal cavity. Previous to the operation, the patient's bowels were moved with an enema, and the bladder was evacuated.

To guard against the hæmorrhage after the abscission, I placed a globular sponge *saturated* with the solution of the persulphate of iron up against and partly into the os, which at once caused it to contract. I removed the sponge on the following day, and the cervix was so much contracted that it would hardly have admitted the index finger.

It was difficult to place the chain of the écraseur in position. At first I tried to apply the "porte chaine" which has been added to Chassaignac's instrument.* This, however, was soon abandoned, and the chain attached at both ends to the mandrel was introduced with the left hand into the vagina behind the tumor, and after it was caused to ascend some distance it was firmly held in position, and as the cylinder of the instrument was passed upward in front of the tumor, the chain was separated, and soon made to surround the uterus, after which it was not difficult to place it in the desired position.

The patient recovered rapidly without unpleasant symptoms occurring, and I shall not extend this article by a detail of the progress of the case. The patient was placed in bed, on her back, and she remained *quiet* in this position for two weeks. McMunn's elixir of opium was given at stated intervals for the first few days. *No loss of blood* followed the operation, and there was very little tympanites or pain. Turpentine stupes applied to the abdomen, and an occasional dose of McMunn's elixir of opium, were all that was required for their relief. When she was tired and wakeful, the latter remedy always afforded rest and a good night's sleep. On the day of the operation, in the evening, the urine was passed naturally, and regularly afterward. The bowels were confined till the tenth day, when they were moved naturally.

There was a small vaginal discharge for a short time. During the first week she was fed a liquid diet, principally panada. A more liberal diet was then gradually allowed, and in the middle of the second week she ate solid food. She soon resumed the muriated tincture of iron, and continued to take it for several months. At the end of the third week she sat up in bed; at the end of the fourth she was allowed to be dressed and sit in a chair, and at the end of five weeks she walked from room to room in her house. In the sixth week she was taken out in a carriage.

July 1.—Before the expiration of the sixth week after the operation, the patient was able to go up and down stairs without inconvenience, and could walk far and not get fatigued.

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* See Sims' "Uterine Surgery," American edition, 1869, pp. 79-82.

She had gained weight, and color was being restored to her cheeks.

Thirty-eight days after the last appearance of the catamenia, and thirty-six from the date of the operation, a small sanguineous effusion occurred, preceded by feelings of slight uneasiness in the back, lasting two days, and it is a peculiar and noticeable physiological circumstance, that at the ensuing periods, up till November following—the time of writing this article—this apparent attempt at menstruation recurred. These periods, lasting from two to three days, have not been attended with any disturbance whatever, or interfered with the patient's comfort in any way. The flow has been small, and after the first twenty-four hours began to disappear.

The mutilation has not changed her feminality, and, with the characteristics of her sex retained, her conjugal relations are the same as before it. She is well and happy, and has gained many pounds in weight, and is in the full enjoyment of good health. What remains of the cervix is very much contracted, and has a transverse opening in it that will barely admit the point of the index finger.

The entire mass removed weighed one pound avoirdupois, less one-quarter ounce troy, and measured in length six and a half inches in circumference at the thickest part twelve inches, and around the neck eight and a half inches. The surface is abraded and ulcerated. The cavity of the inverted uterus measures two and a quarter inches in depth, and one and three-eighths inches in the broadest diameter, and is lined with the peritoneal investment, and part of the fallopian tubes, broad and ovarian ligaments are within. The fibroid is embedded in the parietes of the uterus—is interstitial—and from pressure and distension the tissues covering it are very much attenuated, and round the base so thin and firmly adherent that they can be separated from it only with great difficulty.

The large cavity and the thick uterine walls around it are quite in contrast with inverted uteri, as ordinarily met with in the chronic state. By the contraction of the parietes the cavity ordinarily gradually diminishes, and it is little, if any, larger than it was before the inversion took place. The examination of pathological specimens shows that the cavities of inverted uteri, in the chronic state, are not often larger than a "crow quill."* The illustration represents almost a full-side view of the inverted uterus from the front, and the ┬-shaped incision with the flaps turned back shows the fibroid embedded in and surrounded by the uterine tissues. The amputated surface and the opening into the cavity of the inverted uterus, and the attenuated uterine tissues around the fundus, are also represented in the wood-cut. The illustration shows the inverted uterus and the fibroid in their natural size.

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* "Thoughts on Chronic Inversion of the Uterus, especially in reference to Gastrotomy as a Substitute for Amputation of the Uterus." By Henry Miller, M.D. *Richmond and Louisville Medical Journal*, April, 1870, p. 378.

Fibroids of large size are known to have been found, after death, embedded in the parietes of the uterus, and floating in the abdominal cavity, attached to the fundus by a pedicle, that gave no trouble during life, and were not known to exist till they were found *post mortem*.

Several years ago, I examined the body of a colored woman, who died from cancer of the breast, in whose uterus there were several intramural fibroids and a large globular fibrous tumor floating in the abdomen, attached to the fundus by a pedicle. I first saw the woman only a short time before her death, and, noticing that the abdomen was large and distended with fluid, was led by this circumstance to make the *post mortem*. The uterus was two or three times its natural size, and the interstitial tumors numbered, perhaps, four or five, the largest of which was one and a half or two inches in diameter. The uterus and pediculated tumor were given to a young medical friend, Dr. A. F. Price, now assistant surgeon in the U. S. Navy, to be put into alcohol, and from some inadvertency the specimen was allowed to spoil. I regretted this, as the weight and size of the pediculated tumor had not been taken. It was heavy, however, and would probably have measured from twenty to twenty-five inches in circumference.

From notes of the case taken at the time, it is shown that the woman menstruated regularly and naturally, and at the age of forty-five years—one year before her death—the catamenia disappeared; and that she passed through the climacteric period of her life without suffering from any cause connected with the function of menstruation, that she had been married, and was pregnant three times, and aborted in the early months of each pregnancy; that her occupation was that of a cook, and that she worked regularly at it until eight months before her death; that the tumors existed unrecognized during life; that they caused no suffering or inconvenience, and only prevented pregnancy from continuing to maturity.

The case just referred to is very illustrative of the fact that these tumors may exist long and not cause enough inconvenience to attract attention, and that the patient may die at a late period of life from some other disease without their being recognized.

In the case of the patient, Mrs. B., the fibroid appears to have grown in the parietes of the fundus of the uterus, directly on a line with the vertical axis of the organ, and any cause existing that favored inversion would be determined by it. Taking this view of the case, it is probable that, had pregnancy not taken place, the inversion would not have occurred. Probably complete involution did not take place after delivery, and the tumor as it grew encroached upon the uterine cavity, and drew the fundus with it. The tumor now acted as a foreign body and irritated the uterus, and as it gradually increased in size, the cavity was still further extended; and the uterus contracting to discharge the tumor, pressed it, with the partly inverted fundus, toward the natural outlet, till finally the bearing-down, labor-like pains forced the tumor, enclosed in the parietes of the fundus, through the os. The inversion thus took place *very slowly*, and was developed little by little.

In the absence of such cause, it is more probable that the efforts of the uterus would not have been called into action to expel the fibroid, and that the principal displacement of the uterus that might have occurred would have been ante-flexion or retroflexion, and that the patient could have gone through life with comparatively little suffering.

On the other hand, with the cause existing, inversion would most likely follow, unless means were used to prevent it; and it is not unreasonable to suppose that such result might have been averted, and the patient spared months of mental agony and physical suffering, and still be in the possession of her womb, if remedies had been timely and judiciously employed.

In this case the necessity of a diagnosis seems to have been overlooked, and it points to the importance of paying due attention to the condition of the uterus after delivery, and of not relying upon general indications alone, and of not assuming irregular menstruation, menorrhagia, or other disorder of the organ, to be due to functional derangement, at the expense of a careful local examination.

It does not appear that amputation of the uterus is given a place in works on surgery. But few authors make mention of it.

Professor Gross, who refers to it, says: "When the tumor is hopelessly irreducible, it is not only a source of mechanical inconvenience, but of almost incessant hæmorrhage, draining the system of blood, and keeping the woman constantly at death's door. Under such circumstances, as a *dernier ressort*, amputation is occasionally practised. The operation, however, is generally fatal, the patient dying from shock, hæmorrhage.

peritonitis, or pyæmia. In a case in my hands, some years ago, death occurred in less than forty-eight hours from inflammation; and in another, in which I assisted Professor Miller, the woman perished from hæmorrhage in less than three hours. From the result of these two cases, I should certainly have no desire to repeat the operation."[*]

Dr. Sims says: "I would hesitate a long time before removing another inverted uterus."[†]

In Professor Miller's case, above referred to by Dr. Gross, amputation was made with a bistoury.[‡]

Of the different means that have been employed to amputate the chronic inverted uterus, the ligature and écraseur combined is in greater favor than either the ligature, knife, or écraseur alone. By the use of the ligature and écraseur combined, pyæmia, which is more apt to follow when the ligature alone is employed, is averted, and hæmorrhage when the knife or écraseur is used is prevented.

This procedure will no doubt afford the results claimed for it; and when the pain that is caused by the ligature, during the twenty-four or forty-eight hours that it should be allowed to remain, can be borne, it is perhaps the best way to abscise the organ. In other cases, however, I believe the écraseur alone, with the subsequent application of the persulphate of iron, as above used, will be at least equally as favorable in its results.

It appears that statistics show a lower rate of mortality than other amputations and capital operations,[§] and "there is reason to hope that under more skilful surgery and improved after-treatment the mortality will become still less,"[‖] and that the operation will be given a place in treatises on surgery.

For valuable statistics of the different operations, and interesting memoirs and other information on inversion of the uterus, see:

Medico-Chirurgical Transactions, London, vol. xxxv. p. 125 *et seq.*

Ibid., vol. lii. p. 179 *et seq.*

Ibid., vol. x. p. 358 *et seq.*

Ibid., vol. xli. p. 183 *et seq.*

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[*] "A System of Surgery," etc., by Samuel D. Gross, M.D., 4th edition, 1866, vol. ii. p. 841.

[†] "Clinical Notes on Uterine Surgery," by J. Marion Sims, M.D., American edition, 1869, p. 134.

[‡] *The Richmond and Louisville Medical Journal, loc. cit.*, p. 392.

[§] *The Richmond and Louisville Medical Journal, loc. cit.*, p. 395.

[‖] *Ibid.*, p. 394.

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The American Journal of the Medical Sciences, July, 1856, pp. 127, 128; pp. 265–269.

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Transactions of the Obstetrical Society of London, vol. x., pp. 30–37.

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IRREGULAR UTERINE CONTRACTION.

By E. H. TRENHOLME, M.A., M.D., Professor of Midwifery and Diseases of Women and Children, University of Bishop's College; Attending Physician to the Montreal Dispensary, etc.

The subject of this paper is of such practical importance that I have thought it might not be uninteresting to briefly bring it before you. Observation alone can satisfy each one as to the accuracy of what is stated, and now that the subject is taken up I hope that it will be thoroughly and impartially investigated by you all.

Spasmodic contraction of the uterus is naturally divided into *irregular* contraction during the birth of the child, and *irregular* contraction during the delivery of the placenta.

1st. Irregular contraction of the uterus, during the expulsion of the fœtus, is known by short partial spasms of the uterine walls, which accomplish but little in the way of dilating the os or advancing labor.

These contractions do not occur regularly, either in respect to the space of time intervening between their return or their duration. By placing the hand upon the abdomen, over the uterus, we can frequently detect irregular and partial contraction of the organ. These pains are of a short, sharp, and painful character, and usually cause intense anxiety and distress to the patient.

Upon making a vaginal examination you will detect but slight bulging of the membranes during the pains; also, not unfrequently an unequal dilatation of the muscular layers of the os or cervix uteri. The internal layer is the least dilated; sometimes to not more than half the extent of the external layer. By the way, I may say that the diagnosis of this condition is not so easy as one would naturally suppose, as the internal layer of muscular fibres is thin, and might be mistaken for a thickened decidua.

When the finger has reached the os and is attempted to be passed between the neck and the membranes, we encounter adhesions more or less firm and extensive between the internal surface of the muscles and the decidua.

When the adhesions are on one side, the os is drawn away from the median line and toward that side to which the decidua adheres. As a necessary consequence of such a condition of things, there are obliquity of the womb and irregular oblique presentation of the presenting part at the brim of the pelvis, and retarded engagement and its consequent results.

The existence of these adhesions are ascertained with little difficulty, for, in addition to the facts already mentioned, we have palpable and ocular demonstration of the attachment of shreds of muscular fibre to the decidua. In these cases the membranes are felt to be thickened, and with a little attention this thickening is recognized as due to shreds of muscular fibre adhering to the surface. I have on several occasions removed, by my finger-nails, portions of these shreds from the decidua, both during the dilatation of the os and after the removal of the placenta, and found them composed of fibrillæ of unstriped muscular tissue. (*See plate*).

The adhesions are also recognized by this additional fact, that, after such adhesions have been broken up by the finger, the protruding portion of the membranes rapidly increase in size; the uterus, which was before oblique, soon returns to its central position; the presenting part engages; the irregular, ineffective, spasmodic contractions become regular and powerfully expulsive; and a tedious, lingering labor becomes a normal one, and is speedily brought to a satisfactory conclusion. I have but little doubt more correct and extensive observation will demonstrate that the great majority of oblique presentations will be found to be due to this cause.

The manner in which these abnormal adhesions are produced, and their *modus operandi* in causing irregular spasmodic contractions of the uterus, and its consequent results, will now be considered. In speaking of this matter we can arrive at probable conclusions only, and I shall therefore submit that these adhesions may be due to:

1st. A pathological condition of the inner surface of the uterus, existing previous to gestation; or,

2d. To injuries received during gestation; or,

3d. Result from partial, instead of complete separation of the decidua having taken place before term, *i.e.*, that the ripening of the decidua has not been uniform; or,

4th. To a combination of two or more of these causes.

We will now consider the value of these different hypotheses.

1st. In favor of the idea that these adhesions may be due to a diseased state of the internal surface of the uterus, existing previous to gestation, we have the well-established fact that a part or tissue once the seat of disease or injury, seldom or never regains its original state of perfect health, and is liable to subsequent diseased action. Experience teaches us to be careful in effecting the delivery of the placenta in those cases where we have encountered strong adhesions in a previous labor, as we know that those who have been troubled with such adhesions are obnoxious to them on subsequent occasions.

2d. Adhesions may occur during gestation as a result of local extravasation of blood or liquor sanguinis—either from shock; a plethoric state of the system in general, and the uterus in particular; or, by direct violence applied over the parts affected, as by a blow upon the abdomen; or, possibly, by injury to some part of the neck or lower segment of the uterus, upon the brim of the upper strait of the pelvis. Such an injury as this might be caused by a false step, jump, or fall. For my own part, I am of opinion that this is a not uncommon cause of such adhesions. This view is confirmed by the fact that in most of the cases of retarded labor, due to irregular uterine contraction, that I have met with, the adhesions were situated within a short distance of the os.

3d. The adhesions may be due to partial ripening or want of that cell maturation, by means of which the decidua is separated from the internal surface of the womb at term in natural labor, and which, by the way, is, in all probability, the determining cause of labor, as lately suggested by the present Professor of Midwifery in Edinburgh—Dr. Alexander Simpson.

The strength of the attachment will determine the extent of the irregular contractions, and consequent delay, etc., in parturition.

The induction of labor at all, where adhesions exist, is probably due to the separation already spoken of having taken place, to a sufficient extent to produce uterine irritation and subsequent muscular contraction of the uterus. In this class of causes we need not look for, or suppose, a pathological state of the membranes or uterine surface, but regard it simply as due to a lack of that perfected development of the mucous membrane of the uterus, which is usually accomplished about the end of the ninth month.

4th. Lastly, these adhesions may be the result of two or more of the foregoing causes. There may be a predisposing plethora of the vascular system, accompanied by shock or blows; or, a weakened state of the uterine walls, the result of former disease or injury, and this, by a subsequent injury, may be the cause of local inflammation, effusion of plastic lymph, and subsequent adhesions.

The causes of these adhesions having been spoken of, we will now look at the manner in which they probably cause irregular spasmodic contractions of the uterus and retard labor.

The fault may be in the nerves or in the muscular structure.

1st. The nerves may be at fault, *i.e.*, there may be hyperæsthesia of some branches of nerves, thus inducing hasty, irregular action; or, there may be paralysis of some of the nerves which supply to the parts, and thus occasion irregular muscular action; or,

2d. The cause of the spasm may lie in some abnormal condition of the muscular tissue, apart from any fault in the nerves; or,

3d. The cause may be adhesions between the decidua and the uterus. Thus, the decidua, being closely applied to the muscular surface and the adhesions preventing the membranes from protruding, might act in a mechanical way, and thereby check the shortening of the muscular fibre, the attempt at contraction being met by the counter-extension of the decidua; or, perhaps, the muscular structure, connected at the points of adhesion, may, by being lacerated or irritated during the pains, cause unequal and undue tension of some muscular fibres, the parts injured acting as direct excitants, and in this manner causing that unequal, short, spasmodic form of uterine contraction which characterizes tedious labor.

Of these hypotheses I am inclined to think that the last is most probably the correct one.

I suppose it will be conceded by every one that the whole uterus responds equally and regularly to the stimulus that induces labor, unless there is some abnormal condition of the organ, such as defective enervation, excessive enervation, or muscular change of some part of the organ, as already mentioned.

As to defective enervation I shall not speak. The fact that these kinds of labor occur with women who both before and afterward have natural labor shows that it cannot be due to disease of the nerves or muscles of the uterus.

Where one good and sufficient cause for the production of any phenomenon is known to exist, there is no need to go beyond it, and recognized tension and laceration of the inner layer of muscular fibres, at the points of adhesion, are enough to account for irregular action of the uterus. The effect of these adhesions when they exist, say, on the right side and near to the os, is to interfere with the regular action of the muscular contractions, for the reasons already mentioned, and at the same time cause a very incomplete and imperfect expulsive effort. The steady, protracted bearing-down pains, so desiderated, are wanting, and grinding pains take their place. We all know that the decidua, with its contents, must be elongated, in order to adapt itself to the diminished capacity of the uterine cavity during the spasm, that the waters must escape, or the membranes be protruded through the os and a pouch of fluid occupy the vagina before any progress is made toward the delivery of the child.

This being the case, lateral adhesions must interfere with the descent of the membranes, and cause the bag of waters to be formed at the expense of the membranes which slip down from the side where there are no adhesions. The formation of this pouch in this manner, in its turn, necessarily carries the lower segment of the uterus with the os, toward the side on which the adhesions exist.

Thus, in a first vertex or breech presentation of this kind, the left side of the presenting part would be driven into the cavity of the pelvis, and made to occupy a lower level than the corresponding parts on the opposite side.

The expulsive force of the uterine effort is lost to a great extent on account of the fœtus not being made to engage in the axis of the brim of the pelvis. When we consider the irregularity of the contractions, and the great disadvantages under which the expulsion of the fœtus has to take place, we find abundant cause, not only for the prolongation of the labor, but also for the anxious and exhausted state of the patient herself. The labor pains in these cases are most severe, and this, in my opinion, is due to the muscles acting contrary to each other and tearing themselves asunder, as has been already mentioned, when speaking of the unequal dilatation of the os.

It is this form of pains that most authors recommend to be treated by bleeding, when the patient is plethoric, and when weak and nervous by tepid baths, warm injections, sedatives, opium, belladonna, etc.

The irregularity of the contractions continues till the adhesions are separated; or, the dilatation of the neck has been slowly and painfully accomplished by the inoperative contractions of the organ; or, until the membranes have been ruptured, so as to permit the child to glide over the membranes, seeing the membranes will not glide over the surface of the uterus, as they should do, to allow the child to be born.

To break up the adhesions is an easy matter in those cases where they are situated near the os. The finger gently introduced around the neck, between the membranes and the uterus, readily accomplishes the desired result. Where the adhesions are beyond the reach of the finger, I do not think it advisable to attempt the separation by instrumental means, but rather to rapture the membranes at once, as by this means we effect the chief thing to be desired, viz., the supervention of normal labor. In some cases, after you have broken up the adhesions as far as the finger will reach, you will often find that the os will rapidly dilate, and in a few minutes the finger can be still further introduced and the detachment completed.

I give the following case—one out of many—by way of illustrating what has been said:

Mrs. L., aged 20, first pregnancy; has been in labor last four and a half hours; pains irregular and spasmodic, and accompanied with intense suffering. On examination, found os dilated to the size of a twenty-cent piece; membranes adherent on the right side, and neck of uterus turned that way. A somewhat thick layer of muscular fibres covered the membranes, spread over the dilated part of the os. As I could not reach all the adhesions, the membranes were ruptured, after which the pains became regular and powerfully expulsive, the os dilated rapidly, and the child was born in less than two hours.

By way of illustrating another class of adhesions, I may state that during the past week I attended a Mrs. R., aged 21, in her first confinement. On examination, fonnd womb almost upon the floor of the pelvis, and os dilated to the size of a twenty-cent piece; has bad, grinding pains; little expulsive power for last eight hours. On introducing the finger, could feel no adhesions between the mucous membrane and uterus. Being somewhat in doubt as to the cause of the irregular contractions, I examined more carefully, and then found that there were tolerably strong adhesions between the posterior part of the neck of the uterus and vagina. The adhesions did not exist over the anterior third of the neck. The separation of the parts was easily accomplished, when the expulsive power of the pains was greatly increased, the os dilated more rapidly, but the membranes did not protrude. With the dilatation of the os the womb descended more upon the perinæum, and I then found adhesions between the mucous membrane and the uterine surface, which, when broken up, the labor progressed more rapidly, but I finally was obliged to deliver by the forceps, as the head presented in the third position, and the woman was too weak to complete the labor alone.

This case is mentioned not only on account of its unusual character, but also because it shows that external adhesions may interfere with labor as well as adhesions between the mucous membrane and the inner surface of the womb.

Before leaving the subject, it might not be amiss to say that the cause of gestation being of shorter duration in first pregnancies is probably due to a more rapid maturation of the decidua, combined with a very sensitive state of the muscular surface of the uterine cavity, which favors the induction of muscular contraction before the decidua is thoroughly detached.

It also explains why we have trouble in delivering the placenta in many instrumental cases. The adhesions render the contractions abnormal and inefficient, and this condition renders the forceps necessary to complete the delivery, while the adhesions remain, as before stated, to give us further trouble.

The effects of adhesions upon the delivery of the placenta deserve some consideration; but as I have not had any cases illustrating my views upon the subject, I shall not longer occupy your attention.

We could have no difficulty in attributing hour-glass and spasmodic contractions of parts of the uterus upon the placenta to the same cause that induced such contractions during the first and second stages of labor. In addition to the cause of such contractions, which have been spoken of already, there is the possible irritating effect of the placenta when adherent to the uterus. The mass of the placenta being somewhat firm, and the uterus contracting upon it, might easily cause laceration of some muscular fibres, and thus originate the hour-glass contractions. Also, the contractions might be due to the effect of lacerations of the tissue of the surface during labor, which had left the parts irritable and ready to contract as soon as opportunity offered.

As to treatment of retained placenta, I have nothing special to say. We should follow the recognized mode of dealing with such cases, and, when possible, effect the detachment and removal of the entire mass, with its membranes.

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ORIGINAL COMMUNICATIONS.

SUDDEN DEATH IN PUERPERAL CASES.*

By S. L. JEPSON, M.D., Wheeling, W. Va.

No class of diseases that the physician is called upon to treat is invested with the same amount of interest as those incident to the puerperal state. Indeed, from the very day that a woman becomes pregnant, she is clothed with a new interest, not only for the physician, but for all who take pleasure in watching "those miraculous powers and actions of the living body, that result in forming and perfecting a human being, the crowning work of Deity." Woman, giving promise, by the fact of conception, to suffer the terrible pangs of child-birth that a living soul may be born into the world, is indeed a beautiful being! Her natural charms are now doubly enhanced; and in time of sickness the physician looks upon her with intense interest and solicitude, since on her life and health depends the life of another being, and likewise the happiness of the family. And the sudden, the unexpected death of the puerperal patient is an accident that, more than any other that occurs in the physician's experience, appalls him, and produces a realization of his own weakness in a strife with the "dread adversary." Nor is this true because, by the occurrence of this accident, his reputation is severely tried or even damaged, though this is undoubtedly often the case, but because of the peculiar interest, already referred to, that attaches always to woman in labor, or just released from the pains of parturition.

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It is not necessary for us, then, to impress the importance of every physician so informing himself as to the cause, prevention, and cure of puerperal accidents, that he shall be able to give his patient such counsel and such treatment as will best conduce to her welfare by enabling her to pass through the process of child-birth, and the critical period following, with the least possible danger. It is certainly our duty as well as our interest to search out, by every possible means, the causes, however deeply hidden they may be, of these fearful accidents, and to devise means whereby they may be avoided, or, if this may not always be, whereby dangerous symptoms may be met promptly, and a fatal result prevented, if this lies within the power of human agency.

In furtherance of this end, we propose to present, in as brief form as possible consistent with clearness, the principal causes of sudden death during and after labor, as far as we are able to determine them. We shall also attempt to point out the predisposing circumstances present in each case, and offer, in conclusion, a very few remarks on the subject of *treatment*, especially that which is preventive.

If we may not add any new light on this most interesting topic, we will try to be satisfied if we succeed in presenting the subject in such a way as to attract the attention of the members present, and impress somewhat more firmly upon their minds the fact that, although the process of parturition is in general a purely physiological one, the *post partum* is nevertheless ofttimes a most critical period, and one that demands much closer attention and care on the part of both physician and patient than, in a multitude of cases, it receives.

But we proceed, without further delay, to the performance of our task, pursuing the course as already indicated.

I.—SYNCOPE.

Though this term is familiar to us all, yet it may be well for us, since it is sometimes loosely applied, to have a distinct understanding of its meaning as here used before proceeding with our remarks. The definition of this term, as given by Dunglison, is, "A complete, and generally sudden, loss of sensation and motion, with considerable diminution or entire suspension of the pulsations of the heart and the respiratory movements." Absence from the brain of its proper proportion of blood is the condition giving rise to the most important phenomena of syncope. The *causes* of this condition are innumerable, but are well classified by Copland as follows:

I. *Those causes which act more immediately on the nervous system.* We may name, as examples of this class, depressing emotions; as, sudden terror, anxiety, disappointment.

II. *Those which affect chiefly the vascular system.* Examples: advanced heart disease, loss of blood, sudden removal of pressure from large blood-vessels.

III. *Causes acting upon the heart through the nerves.* Example: offensive and nauseating odors.

Brown-Séquard has recently expressed his belief that syncope may result from contraction of the blood-vessels of the cerebral lobes from spasm, and consequent diminution of blood supply. This spasm he regards as a true reflex action, the consequence of some peripheral nerve irritation. A large number of cases of syncope may doubtless be placed in Copland's third class, and are examples of reflex action as now well understood.

All the causes here mentioned are liable to operate on any one even in health, but, of course, with much greater force on the hysterical, the weak, or the excessively indulged, who are liable to faint from the slightest cause. These faintings are everyday occurrences, and almost always devoid of danger; but, when we examine the condition of the lying-in patient, we find circumstances such as will not only render the occurrence of syncope more common, but which also render it much more liable to terminate fatally.

Let us note briefly some of the conditions which render syncope especially common and dangerous to the puerpera.

(1.) There is always a temporary prostration of the vascular system after parturition. This is to be expected when we reflect that there is almost invariably a considerable loss of blood, which sometimes amounts to a hæmorrhage. Again, there is generally a profuse secretion from the skin, induced by the parturient efforts, which is in itself prostrating. But the enfeebled circulation is due mainly to the collapse which always ensues after violent muscular efforts, intense pain, and the inordinate excitement of the heart and arteries (Hodge).

(2.) The removal, by the birth of the child, of the mechanical support to the large vessels of the abdomen. We haye all witnessed the occurrence of, or tendency to, syncope in the patient tapped for ascites. The artificial support seems to become a sort of necessity, and, the abdomen having become so distended by pregnancy, we have not even the natural support of the viscera. This must be substituted by other support, if we would prevent unpleasant results.

(3.) Actual diminution of the quantity of blood in the circulation, in consequence of which it becomes more difficult to keep the cerebral vessels supplied. Of course, this is especially true when hæmorrhage has occurred.

(4.) The nervous susceptibility is highly exalted after labor. This is so common an observation, and the causes of this condition are so obvious, that comment is unnecessary. The connection between nervous irritability and syncope is obvious.

(5.) In this connection we may mention, as an aggravating circumstance, that extreme mental depression which exists in not a few cases prior to and during confinement, being the result of a long-felt fear—"a presentiment," the patient calls it—that the labor will terminate fatally. While this feeling is not at all uncommon, and is rightly regarded as indicative of no serious result, yet there can be no doubt that such mental depression renders the operation of certain predisposing causes of syncope, as those acting through the mind, more easy. However much we may laugh at this feeling, it is impossible to disabuse the mind of our patient of it, more especially since every neighborhood almost can point to at least one case where this "presentiment" was followed by death. Only a coincidence, of course; but we must remember that *physicians alone* are able to always tell the *post hoc* from the *propter hoc!*

(6.) Another condition which operates unfavorably in a number of cases is that extreme muscular relaxation, and consequent dilatation, of the walls of the heart, which is the consequence of anæmia during pregnancy. Whatever diminishes the force of the circulation increases the tendency to syncope, and in this way does dilatation of the heart act, the ventricular contraction being weakened.

We have, then, as predisposing causes of syncope in the newly-delivered woman: 1. Increased nervous susceptibility; 2. Mental depression, or the results of it; 3. Prostration of the vascular system; 4. Diminution of blood-supply; 5. Removal of support from the abdominal vessels; 6. Weakened heart-action, the result of dilatation.* Either of these conditions, with the presence of an exciting cause, would be sufficient to bring on syncope; but when two or more operate together, as is generally true in these cases, we should not be surprised at its frequent occurrence.

The above being conditions *favorable to* the occurrence of syncope, what are the *exciting causes?* These are so numerous that we cannot stop to mention them, nor is it necessary even were it possible. Let us, however, examine the *modus operandi* in a few cases.

The influence of position in determining the momentum of blood in the vessels is well known. Now, suppose our patient, with causes 3, 4, and 5, as numbered in our summary of predisposing conditions operating, should suddenly assume the erect position. The consequence is that an equally sudden gravitation of blood takes place, the vascular distension of the brain becomes instantly lessened, and a sensation of faintness comes on, often, it is true, but temporary and trivial in character, but occasionally, and especially in cases already much prostrated by loss of blood and other causes, it becomes fatal. And this danger is much increased, as Meigs points out, if fresh hæmorrhage should be brought about, as might very easily be done in a womb not perfectly contracted, by this sudden change from the horizontal position.

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* We do not pretend, of course, that all these conditions are present in all puerperal cases, though an examination of those cases in which syncope occurs would perhaps discover more of them present than we are apt to suppose.

Suppose, again, with causes 1, 2, and 3 operating, any communication of a startling nature be incautiously made to the patient. We might expect to see the cheek blanch, and to feel the pulse grow feeble beneath our touch, the heart almost literally "standing still from fear." The same result may follow any *physical* impression, as a blow or sudden pain even of the most trivial character (Cazeaux). Perhaps the phenomena in these cases may be correctly classed as reflex manifestations. Causes, similar in their operation, were referred to by Denman many years ago, and before their mode of operation was so well understood as now. He says, sometimes "patients are subject to frequent returns of spasm or cramplike pains in the stomach, extending their influence to the heart, as is shown by the temporary suspension or interruption of the circulation, indicated by the pulse. These symptoms may return after delivery with increased and dreadful violence."

But it is impossible, as we have remarked, to specify every exciting cause of syncope in these cases. In the words of a distinguished author, "there is scarcely an occurrence or external agent that will not, on some occasion or other, induce syncope. . . . Marcellus Donatus has seen it produced by soft music. The airs of their native land have produced it in persons subject to nostalgia." Of course cases of fainting sometimes occur for which we can find no adequate cause; and these, even when fatal in their termination, are met with in obstetric practice. Prof. G. T. Elliot thinks that in these cases fatty degeneration of the heart may frequently serve as an important factor in the causation of syncope. Hodge speaks of syncope occurring during or after labor, especially in women of an excitable temperament, "where the symptom is purely of a nervous character." Bedford records a fatal result where the "cause of the syncope was simply emotion." It is not improbable, when we take into consideration the extreme impressibility of women, upon whom the predisposing circumstances we have named are operating, that even the physical impression of cold air, or other external cause which we are unable to discover, may be sufficient to produce so great an impression upon the morbidly sensitive nervous system that syncope is brought about. If Brown-Séquard's recently promulgated theories be accepted as true—if we understand them correctly—the peripheral nerve irritation in such cases may be referred to the heart, causing a diminution or cessation of its action, or to the brain, producing spasm of the cerebral vessels. In either case the brain is depleted, and fainting results.

But we make no attempt to trace the causes of this symptom further, believing it may almost always be explained in one of the ways already indicated.

It is not necessary to speak of the *symptoms* of syncope, which are familiar to us all; so we proceed at once to the consideration of our *second cause of sudden death*, viz.:

II.—SHOCK.

By this term we understand that disarrangement of the harmony of action of the great organs of the body, the result of a sudden disturbance of the functions of the circulatory, respiratory, and nervous symptoms (Erichson). The symptoms are such as result from the combination of the effects of depression of the heart's action, and interruption of the functions of the brain and nervous system. In some of its phases, shock is closely allied to syncope, and it resembles it when the operating cause "affects the intimate organization and circulation of the brain"; and if depression of the vascular system should predominate over that of the nervous, we may expect to find our patient lying in a state of syncope. If, however, the nervous system is chiefly affected, the heart's action may be restored to its natural strength, and yet the patient remain insensible (Druitt).

In a large number of cases we find a certain degree of collapse after confinement. The pulse for a time, instead of being full and somewhat frequent, as it is apt to be during the process of parturition, is slow and soft, and the patient experiences a feeling of exhaustion beyond what is common and natural. Though this state is generally speedily recovered from, yet the shock may be so violent as to result fatally in a few hours, or even before the delivery is completed.

Whatever tends to diminish vital resistance, predisposes to shock. Some of the circumstances that may operate in puerperal cases are the same as those we have named as predisposing to syncope. The principal conditions may be named as follows:

1. *Great mental despondency*, the result of a dread of an unfortunate termination, or other cause.

2. *A delicate, highly-nervous organization.*—As tending to bring about an irritable state of the nervous system, we may name the excessive nausea and vomiting that sometimes occur in the last weeks of pregnancy.

3. *The existence of organic disease*, especially of the heart, brain, or kidneys. These diseases act not only by reducing the strength of the system, but also, perhaps, by damaging the quality of the blood (one of them, at least), and impairing the force of the circulation.

We will not stop to name other unfavorable conditions, as they will readily occur to you. Given these predisposing causes, we may name as more direct factors in the production of dangerous or fatal collapse: . Excessive severity, with or without long duration of labor. Pain to a certain extent is conservative, but, when great and long-continued, may completely prostrate or overwhelm the nervous centres. 2. Hæmorrhage. 3. Extensive contusions and lacerations of the soft parts, as perinæum and vagina, and rupture of the uterus or bladder. All these causes operate during labor, but their influence extends to the *post-partum* period. It is not necessary to enlarge on any of these points, as their mode of operation is plainly marked. . An additional cause of shock is found in the extensive sloughing that may follow contusions of the vagina or cervix uteri, the result of protracted pressure of the fœtal head, or the unskilful use of instruments. Dr. Thomas More Madden has recently given the report of a case of sudden death from shock "induced by sloughing of the cervix uteri" (AM. JOUR. OBST., Aug., 1871). He remarks that no other writer, as far as he is aware, has mentioned this cause of sudden death. Blundell treats at some length of causes which, if not identical, are certainly similar to the one in Dr. Madden's case. "Dreadful contusions and mortifications," he remarks, "are apt to occur in laborious labors, . . . from the rude action of the hand, perhaps; from violent efforts to abstract the head with instruments; from frequently repeated but unavailing labor-pains; and, above all, from impaction of the head in the cavity of the pelvis. . . . By any of these causes, intense mortifications, sweeping all round the upper or inferior part of the vagina, may be produced. If these sloughs are superficial, they are less dangerous; but if they lie about and penetrate deeply, death at the end of a few hours . . . is not unfrequently the result, the system giving way under collapse."

The symptoms and phenomena of shock are so fully pointed out in all surgical works that we will not stop to notice them. That it may prove speedily fatal in the puerperal as in the surgical patient, is a fact no one will deny.

Having thus briefly referred to fatal collapse, and some of its causes, we pass to the *third cause of sudden death*, viz.:

III.—EMBOLISM.

Under this term, for convenience, we will include the phenomena of *thrombosis*, by which we understand the process of *clot-formation* and *embolism*, or *clot-transmission.* This is a subject which, until a comparatively recent period, was but imperfectly understood, and doubtless many cases of sudden death have occurred, both in puerperal and other patients, which were, for want of a clearer knowledge of this subject, ascribed to lesion of the heart or brain. There is possibly now a danger of the profession running to the extreme in another direction, and of ascribing to *embolism* every sudden death that occurs. However this may be, deaths from this cause certainly do occur, and some of these cases we find among lying-in patients. Dr. Madden, to whose paper we have already referred, gives it as his opinion that "this is the most frequent cause of sudden death after parturition." Following the plan we have thus far pursued, let us examine the principal conditions and circumstances attending pregnancy and the puerperal state, or that may be present in particular cases that are favorable to clot-formation, or directly produce it.

And we name, 1st. *The peculiar altered condition of the blood of the pregnant woman.* It is well known that during the latter months of pregnancy, the blood differs decidedly from its normal condition, the essential, and to us most interesting, change being a marked increase of fibrine, with diminution of the corpuscles. This condition of the blood continues for some time after the occurrence of parturition. The quantity of fibrine generally present in the circulating fluid is between two and three parts to the thousand; during the last month of pregnancy the fibrine is increased sometimes to nearly four and a half parts in the thousand. Now, the coagulation of the blood, physiologists tell us, depends entirely on the presence of fibrine; and its coagulability is increased by any circumstance that augments the quantity of this constituent. With the large increase that we have named, the increased danger of thrombosis occurring is readily seen; and, with some of the unfavorable conditions that are often present in the puerperal state, even *spontaneous coagulation* may occur at any time.

2d. *Anæmia may exist previous to confinement*, which would aggravate the hyperinosis of pregnancy, since a relative increase of fibrine is characteristic of this condition likewise. Anæmia would also act unfavorably by inducing a flabby or relaxed condition of the muscular walls of the heart, and thus impairing the force of the circulation, which, as we shall hereafter see, favors clot-formation.

3d. *The loss of blood after delivery* acts also in these two ways, viz., by depressing the circulation, and by destroying the normal relation existing between the fibrine and blood-corpuscles, leaving the former relatively increased.

4th. *The occurrence of inflammation*, which is a quite common sequence of parturition, would still further increase the danger from this cause. Especially is this true of inflammation of the lungs, which may itself arise in puerperal cases as a consequence of embolism. When this disease exists, an overaccumulation of blood may occur in the right cavities of the heart, from the presence of the exudation preventing a free passage of blood through the lungs. The right ventricle and auricle are enfeebled by distension, and this condition, in conjunction with the increase of fibrine in the blood, leads to coagulation (Flint). A death from embolism, with the conditions of pleuro-pneumonia and the puerperal state, occurred in this city a few months ago. The patient was convalescing favorably, and, while sitting up in bed, the respiration became suddenly embarrassed, other symptoms of heart-clot were present, and death occurred in half an hour. An autopsy verified the diagnosis previously made by Dr. R. H. Cummins.

5th. *Prostration of the vascular system*, to which we have referred so often as a frequent occurrence after accouchement, even apart from any unusual loss of blood, and which sometimes exists, as we have seen, to an alarming degree. Any circumstance that retards the blood current favors the formation of coagula; and should a state of *syncope* by any means be brought about, thrombosis is very liable to result, when so many other favoring circumstances exist. This mode of sudden death was pointed out by Meigs as long ago as 1849.

6th. *Open state of the uterine sinuses*, facilitating the entrance into the circulation of either detached clots or particles of other foreign substances that may serve as nuclei for the collection of fibrine. Sir James Simpson has pointed out that "morbid matters sometimes pass into the circulation in the puerperal state, through the uterine veins, and are afterwards carried round with the circulating mass. . . . Some of these appear to have a direct tendency to produce coagulation, or consolidation, in the super-fibrinated and diseased blood."

7th. *Severe contusions and lacerations during labor*, by which vessels of considerable size sustain mechanical injury, and through these, if ruptured, detached clots or any foreign substance may pass into the circulation, as through the uterine sinuses. Or, a coagulum may be formed in the vessel, as a consequence of external irritation. It is a well-established fact that clotting of blood in a vessel may be caused by irritation *outside* the vessel, even the pressure of an enlarged gland sometimes producing this result. The same result sometimes follows gun-shot wounds, open sores, or bone fractures. It is only necessary to suggest that many sources of similar irritation frequently arise during the process of parturition.

8th. *Inflammation of veins*, as in the phlegmasia dolens, which is not a rare sequence of parturition. It is not necessary for us to enquire in this connection what the pathology of phlegmasia dolens is; whether the inflammation of the uterine veins is the starting-point, and the blood coagulation a result; whether the coagulation in the veins is the incipient morbid condition; or whether the whole chain of symptoms arises from, and depends upon, the presence in the circulation of impure or morbid blood. Doubtless, however, the latter condition is sometimes an active agent, We know that inflammation of the veins in phlegmasia dolens results in, or is attended by, the formation of clots at the seat of the disease; and this can often be detected in the femoral vein by palpitation, a cord-like induration being perceptible. Yet a vein may be inflamed without the existence or formation of any coagulum; nor is a clot always necessary as the starting-point of *embolism*, since any morbid matter, the result of inflammation, may be taken up and carried from the seat of inflammation through the circulation, producing a clot in the course of its progress, or, after reaching the heart, by serving as a nucleus for the collection of fibrine. This, then, is one danger resulting from *post-partum* phlebitis.

The more common danger, perhaps, is that which may arise from the formation of a thrombus at the seat of the phlebitis, the condition present in phlegmasia dolens. A portion of this clot may become detached, by external manipulation or other disturbance, for example, pass into the blood current, and all the phenomena of embolism, followed by speedy death, are liable to occur. In the celebrated case of Druitt, a clot twenty inches long, and " with every appearance of having been formed in the femoral vein," was found curled up in the right auricle and ventricle.

9th. *Co-existing Heart Disease.*—Another condition which, should it be present, would add to the danger of embolism arising, is the co-existence of that form of heart disease in which a roughening of the valves or lining membrane exists, or in which vegetations are found, which conditions favor a deposit of fibrine. The existence, also, of dilatation would increase the liability of this deposit taking place, by weakening the ventricular contraction, and thereby diminishing the force of the stream.

Now, this deposit of fibrine, after once being formed, will increase in size by fresh deposits; and there is danger at all times, even much greater than in the case of a venous clot, of its being displaced and washed away into the blood current. If it has increased to a sufficient size, it may lodge in the pulmonary artery, provided its origin was in the right heart, and a speedy, if not immediate, death will be the result. If, however, the clot be not large enough to shut off the blood from the lungs, death may still occur, but in a less speedy manner, and the phenomena of imperfect respiration and embarrassed heart action will be more fully developed.

We have made no reference above to any heart inflammations, though some authors assert that a peculiar liability exists in the puerperal female to attacks of endocarditis and pericarditis. Testa, as referred to by Simpson, claims one or two forms of puerperal carditic inflammation. The direct connection between especially endocarditis and embolism, it is not necessary to dwell upon.

IV.—PRE-EXISTING HEART DISEASE

we name as a fourth direct cause of sudden deaths in puerperal cases. We have already referred to several forms of heart disease, as being favorable to the occurrence of *certain other conditions* that act as the direct causes of sudden death. We now wish to say a few words concerning those forms of disease of this organ which may, and often do, independent of the puerperal state, produce unexpected death.

Of course the woman who is a subject of any of these diseases may become pregnant; and should death from this cause occur soon after confinement, the heart affection is apt to be overlooked, and the death is attributed to some incident of the puerperal state. Especially is this true, if the heart disease be of that form which may exist without producing active or troublesome symptoms. Such is the case with certain valvular lesions, as aortic insufficiency, which, although no symptom may present during life to point to the existence of organic change, sometimes causes death, and this very suddenly, the heart becoming paralyzed by overdistension of the left ventricle, which we once saw result from the sudden effort of a patient to rise in bed.

It is not necessary for us to enter at length upon a discussion of this division of our subject, since any heart disease that terminates life quickly acts in the same manner with the puerperal as with any other patient. The many peculiar favoring circumstances, however, which are present in these cases, render death from this cause more frequent than in the non-pregnant state. It may therefore not be out of place for us to urge the importance, in all cases of unexpected death occurring soon after child-birth, of interrogating the heart, if an opportunity offers prior to death. Perhaps in these cases an actual physical examination is rarely, if ever, practicable; but we may learn the rational symptoms, and also learn something concerning the previous existence or non-existence of heart affection. Thus it may be possible to arrive at a correct diagnosis, which in these cases is a peculiar satisfaction to the physician, as well as to the friends of the patient.

V.—HÆMORRHAGE,

Especially internal or concealed, we mention as a fifth cause of sudden death. We refer now to hæmorrhage which is of such an amount as to act as the direct cause of sudden death. Ordinary *post-partum* hæmorrhage may, and not unfrequently does, terminate life speedily; but in these cases the danger is known and appreciated by the physician, and hence death, when it occurs, cannot be said to be *unexpected*. We therefore pass this point without further remark.

Unexpected death is more liable to result from *internal* or *concealed* hæmorrhage. This may occur before the completion of pregnancy, or, which is more common, during labor, before the expulsion of the fœtus the placenta becoming detached in the centre and the blood collecting beneath it, while the circumference, remains attached to the uterus. Or, if the hæmorrhage continues, the membranes may become detached over a large extent of the uterine surface. The symptoms of this accident, as pointed out by Cazeaux, may be thus briefly stated: the general phenomena that accompany all losses of blood are present; rapid enlargement of the abdomen occurs; abdomen becomes painful; abdomen becomes separated by a depression into two prominences, the one representing the collection of blood, and the other the ovum; occasionally an obscure fluctuation can be detected; labor-pains are sometimes weakened or suspended. This, however, is a rare form of hæmorrhage, and a still more rare cause of sudden death.

We attach much more importance to that form of concealed hæmorrhage which occurs after the birth of the child. This may occur before the expulsion, but after a partial or complete detachment of the placenta has taken place, and before the uterus has ever become firmly contracted. The placenta, membranes, and clots serve as a tampon, and hæmorrhage continues without interruption, in consequence of uterine inertia. We feel justified in saying that hæmorrhage under these circumstances could never occur without the physician's knowledge of it, but from gross neglect on his part.

Firm contraction of the uterus around the placenta, however, may occur, and relaxation again speedily take place, followed by bleeding, the placenta and membranes being sometimes pushed down into the vagina, and presenting to the touch the sensation of a second bag of waters (Blundell). Dr. J. Braxton Hicks, in a recent paper, says he has met with three cases of this kind, "the membranes remaining attached to the lower part of the uterus, while the part of them towards the fundus becomes, along with a portion of the placenta, separated by the effusion of blood, which gradually pushes it down towards and through the os uteri." (Am. Jour. Obst., Feb., 1872.)

But there is another form of hæmorrhage which may occur after every proper precaution has been taken. We refer to bleeding, which not unfrequently comes on as the result of secondary inertia. This may occur a few minutes, or hours, or even days, after the completion of labor, and after the accoucheur has decided that the uterus is firmly and properly contracted. The time of greatest danger is the first hour or two after the delivery of the after-birth. The discharge of blood from the vagina in these cases may be prevented by a portion of the placenta or membranes that have been left behind becoming engaged in the os; by a collection of congula; by too great elevation of the hips; by spasmodic contraction of the os uteri, the fundus and body remaining relaxed; or by the closure of the vulva by the napkin that has been improperly placed. This form of bleeding is especially dangerous when occurring soon after delivery; and the danger is increased if the hæmorrhage should come on during the sleep of the patient. In this case it is more apt to progress to a fatal result without detection.

Some authors speak of still another cause of uterine hæmorrhage, which may come on several days after labor, viz., *congestion of the uterus*. Madame Lachapelle says she has known "a woman to suddenly perish seven or eight days after her confinement from a profuse discharge of serous blood, . . . which saturated, by imbibition, the most solid tampon. The womb was soft, but not distended with blood." We have seen one case in which serious hæmorrhage, commencing very suddenly with the discharge of clots, came on after the tenth day, and which, we think, might have proved fatal but for an immediate resort to vigorous measures. Since, however, great relaxation of the uterine tissues does not occur in these cases, it is rarely that they progress to a sudden termination of life. Such a result might be brought about by a delay in the use of remedies.

We have thus hastily run over the different forms of hæmorrhage from the womb that may speedily terminate the life of the puerpera, not deeming it necessary to dwell at any length, since the subject is fully expounded in all late obstetrical works.

We now pass to a brief notice of our last prominent cause of sudden death, viz.:

VI.—ENTRANCE OF AIR THROUGH THE UTERINE SINUSES INTO THE CIRCULATION.

This is a subject which, until a comparatively recent period, received no study; and even now points remain which need further elucidation. The possibility of this accident occurring was first suggested by the younger Legallois, over forty years ago, his father having observed the sudden death of a rabbit after parturition, an autopsy of which revealed the presence of air in the right auricle, pulmonary artery, anterior and posterior venæ cavæ, and uterine veins. The subject has since been developed by Simpson, John Rose Cormack, George May, Jr., Dr. Green, of Mass.,* and others: so that at the present day it is generally conceded that *air may enter the uterine veins after childbirth*, and that death may result from this cause.

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* To whose interesting paper in the *Amer. Jour. Med. Sci.*, for Jan., 1864, we are indebted for many facts here given.

It has long been known that air may enter the circulation after injuries or surgical operations; and that this occurs generally through the large veins about the neck, the location of which has hence acquired the name of the "dangerous region." This may happen when, from any cause, the incised extremity of the injured vessel is kept from closing; and the explanation generally received is, that during inspiration there is a tendency to the formation of a vacuum within the thorax," by which the air is drawn into the cut vein. Hence it has been noticed that air never enters the veins of the neck except during inspiration; and that during expiration air which has entered may even in some measure be expelled.

Now, when we examine the exact state of the newly delivered woman, we find conditions that are equally favorable for the occurrence of this accident. After accouchement the uterine veins are exceedingly large—"the size of a goose-quill, and some of them will admit the little finger without lacerating" (McClintock). They are also free from inosculation, and are without valves; and in a relaxed condition of the uterus are patulous.

The condition of the uterus and veins being favorable, then, how is the introduction of air brought about? The entrance of air into the vagina and uterus is the first step. Churchill thinks it may penetrate during the process of expulsion of the child, or that it may be present as the result of decomposition. Perhaps, however, it more commonly enters after the birth of the child. Dr. Adolph Rusch, after a careful investigation of the subject, has found that, by placing a multipara, whose genitals are in a normal condition, in the prone position or on all fours, air will enter the vagina, if the vulva be open, "because the intestines, falling downwards by gravity, cause a vacuum." (Dr. Barnes's Lecture, *Lancet*, Feb. 10, 1872.) He did not find this to occur when the patient was on her back or side, though we can readily imagine it might do so if the head was much lower than the pelvis, and with the relaxed and heavy state of the uterus which we find after delivery. Dr. Barnes, in a recent lecture (*loc. cit.*), says: "If an examination is made when the uterus is relaxed after labor, especially if the hand be introduced into the uterus, the vaginal walls are separated from their usual contact, and a channel is formed along which air easily enters. Merely turning on the side, or a little more prone, will often, by favoring a fall of the uterus forwards, produce a vacuum, into which air will rush." Now, is it not possible, during this rush, for the air to enter, not only the vagina and uterus, but even at the same time the open sinuses? Or, a large quantity having once entered the womb, a repetition of the same cause, viz., falling suddenly forwards of the uterus and intestines, might force the air into the veins. This would be especially liable to occur if the detached placenta, or a remaining portion of it with membranes, covered the os in such a way as to permit the entrance, and yet prevent the exit, of air; in other words, to act as a valve at the os.

Amussat thinks that the respiratory movements even, by elevating and depressing the intestines, may operate here as at the neck, and a suction action, or "venous inspiration," be produced.

But Simpson gives another explanation of this occurrence, accounting for it in this way: "Supposing air once introduced into the uterine cavity, which in some cases may occur in consequence of the alternate relaxations and contractions of the organ following delivery (as in after-pains, post-partum hæmorrhage, etc.); and supposing further that, under the returning contractions of the organ, the expulsion of this air was prevented by the presence of a clot at the os uteri, or other such obstructing cause; it will then, under the compression to which it is subjected, be liable to be driven into the open venous orifices existing in the lining membrane of the uterus." (Works, vol. ii. p. 721.) Dr. Cormack accepts this explanation, and even emphasizes it. He says: "Should any impediment be offered, in such cases, to the free exit of air by the os uteri, it must be forced into the uterine veins, were their mouths not protected by coagula."

Symptoms.—It has been found by experiment, and in the observation of cases, that there must be either a considerable quantity of air present, or that it must enter the circulation with considerable force, in order to cause speedy death. A small quantity, injected slowly, produces but temporary disturbance. The symptoms present in serious or fatal cases we abbreviate from Dr. Green's paper as follows: The patient suddenly turns pale, utters a cry of alarm, as if death were impending, and becomes insensible. Or there may be observed anxiety of countenance, labored respiration, lividity of the lips, dilated pupils, convulsions. The pulse is generally feeble, often being imperceptible. Sometimes, however, violent and irregular action of the heart is observed. Again, lividity of the face and stertorous breathing may be prominent symptoms. A cold sweat often breaks out on the face. A violent cough has been present in a few cases. In one case auscultation of the heart revealed a churning sound, completely masking the natural valve sounds.

Dr. Simpson gives prominence to the "evanescent red scarlatinoid rash over the body," which he saw in several cases, and which, he suggests, may possibly be due to a direct mixture of the introduced air with, and consequent oxygenation of, the blood in the capillary vessels.

Post-mortem Appearances.—Autopsies have been made in a number of cases in which death occurred soon after parturition from this cause. None that we have seen recorded are any more satisfactory than that of Simpson: hence we give it. The patient had been delivered of twins, hæmorrhage had occurred, with alternate contractions and relaxations of the uterus: a number of the symptoms named above presented, and the patient died in a few hours. Suspecting that death had been produced by the entrance of air into the uterine veins, "the body was opened a short time after death, because it was considered desirable not to incur the fallacy of air being present from decomposition. . . . To make the examination more certain, the abdomen was opened under water. The lower vena cava, but especially the uterine and hypogastric veins, were distended with frothy blood, and air bubbled up through the water when any of these tubes were opened. The larger veins of the extremities were in the same state" (*op. cit.*) Nothing is said of the heart in this case; but of nine cases, narrated by Mr. George May, Jr., air was found in the heart in five. In one case, the "right auricle was distended with air. Hardly a trace of blood existed in the heart." In another, in which the autopsy was made before the body was cold, the heart appeared distended, and "on opening the right auricle a quantity of air escaped with a sort of little puff, and the organ was at once reduced to its proper dimensions" (*Am. Jour. Med. Sc.*, Oct., 1857, from *Brit. Med. Jour.*, June, 1857). In cases recorded by other observers, the heart has been found distended with frothy blood.

The proximate causes of death in these cases is a point upon which authors differ widely. The following points seem to us to embrace the most rational, and are perhaps the most generally accepted, views of the profession.

1st. Distension of the heart by air, or air and blood beat into a spumous mass.

2d. Consequent imperfect closure of valves.

3d. Inability of the heart, on account of these conditions, and from the presence of frothy blood in the pulmonary artery, to propel a sufficient quantity of blood to the lungs.

4th. Consequent diminution or loss of healthy blood supply to the brain and nervous system.

These views are not inconsistent with the opinion of Gross, who attributes death to "a want of sufficient oxygenated blood in the great tripod of life—the heart, lungs, and brain."

The above-named six causes—viz., syncope, shock, embolism, pre-existing heart disease, hæmorrhage, and entrance of air into uterine sinuses—account for a very large proportion of sudden deaths that occur during or soon after parturition. There are, however, a number of minor causes that may operate in rare cases to bring about this unfortunate result. Among these we may mention *pulmonary œdema.* There are a number of conditions not unfrequently present in the puerpera that may give rise to this result. We may name among these, degenerative lesion of the kidneys; valvular heart disease, with dilatation; anæmia, with dilatation of the heart, both conditions predisposing to serous transudations; general œdema of pregnancy, which, as Meigs says, renders the patient prone to effusions into the pericardium and lung substance; and the long continued recumbent position favoring, especially when there is a low condition of the system, hypostatic congestion, which precedes lung infiltration, from which speedy death by apnœa may result.

Again, Dr. Madden has reported a case of sudden death resulting from *rupture of a varicocele of the ovarian vein.* Dr. Simpson has seen death occur from *rupture of a hepatic abscess* during labor, and another from *peritoneal fissures on the uterus*, from which fatal bleeding took place. Cazeaux points out the danger of death being produced during labor by the *rupture of a large aneurism.* He likewise thinks death may result from the occurrence of severe *hæmoptysis* or *hæmatemesis* during the violent throes ot the second stage of labor; and Blundell relates a case of death from hæmorrhage consequent on *rupture of pulmonary vessels.* The same author gives the history of another case of instant death during labor, in which a *post-mortem* examination revealed a *laceration of the right ventricle of the heart.*

We could, perhaps, name other circumstances that might occur to cause death in these cases, but deem it unnecessary, believing those not already mentioned are rare exceptions.

Treatment, especially that which is Preventive.—Having occupied a much larger portion of your time than we expected to do, we must make our remarks on this part of the subject even more brief than we had intended. And this will readily be permitted, since, unfortunately, we have nothing new to offer on this most important and interesting point.

We desire, however, to urge that the instructions given by our best obstetrical writers, and sanctioned by the judgment of the profession, touching the management of the puerperal patient shall be rigidly enforced. These will occur to you all, and need not be here repeated. A few words on some special points, however, may be permitted, especially as some of them are disputed ones.

1st. We believe in the teaching which Hodge enforces, that the woman should be delivered on the bed on which she is to lie during the puerperal period, which plan avoids the exhaustion, syncope, hæmorrhage, and other evil consequences which may follow her removal from one bed to another after confinement.

2d. Let her also be in the dorsal position at the close of the second stage of labor and afterwards, which, in addition to many other advantages, lessens the probability of air entering the uterus, and hence the uterine veins.

3d. A point suggested by our friend Dr. Hupp we believe an important one—viz., remove all pillars from the head and shoulders immediately after the expulsion of the child, which obviates any tendency to syncope, and may in some cases prevent hæmorrhage, by diminishing the force with which the blood flows to the uterus.

4th. We believe much danger will be prevented by adopting Crede's method in removing the placenta. Even during the expulsion of the child, instruct the nurse to grasp the fundus of the uterus, and follow it down as it contracts, keeping the hand in position until the accoucheur has given the necessary attentions to the child. Let him then, during the first contraction that occurs after the escape of the infant, "embrace the fundus and the superior part of the anterior wall of the uterus with the entire right hand placed transversely; then press downward and backward, assisting, if necessary, with the left hand. Under this pressure the placenta and membranes are detached, then engage in the uterine orifice—sometimes even escape suddenly from the vagina, just as a cherry-seed escapes when the cherry is pressed between the thumb and finger." The advantages of this method are an early expulsion of the placenta, with no probability of retention occurring at any time; a firm contraction of the uterus is ensured, and thus hæmorrhage and the entrance of air prevented.

Dr. G. Chantreuil reports five hundred and forty cases in which this method was adopted, and not a single case of hæmorrhage or placental retention occurred. In five hundred and eleven of these, the placenta was removed within six minutes, and in more than one-half within three minutes, after the birth of the child (AM. JOUR. OBST., Aug., 1871).

Professor Parvin, who has published an interesting paper on this subject, says: "Since pursuing essentially the practice advised by Crede, I have not had a single case of hæmorrhage, nor have I had a single case in which the placenta was not delivered within, at the most, ten minutes after the birth of the child" (*Am. Practitioner*, Sept., 1871).

5th. After the placenta is expelled in this way, let an assistant grasp the uterus, and thus keep it contracted until the bandage is applied. If this is not done, and coagula collect, let them be carefully removed, and also *all* of the placenta and membranes. The womb should be firmly contracted before the bandage is applied; and all will agree that it is wise to remain with the patient at least one hour after the birth of the child. Yet these rules, especially the last, are often neglected, and many physicians can recall cases of violent, if not fatal, hæmorrhage as a consequence.

6th. Many eminent physicians, especially among the French, have adopted the practice of invariably administering a good dose of ergot immediately after the child is born. We are inclined to regard the practice a good one, and particularly with multiparæ.

7th. We are decidedly in favor of the bandage, and believe the reasons generally given for its use are sufficient, while the objections, when it is properly applied, amount to *nil.*

8th. We are likewise a believer in the practice which restricts the patient to low diet for a few days, because of the peculiar excitability of the system at this time, and the predisposition to violent reaction. Cases, of course, occur in which it is wise to depart from this practice.

9th. Symptoms of shock, syncope, hæmorrhage, etc., must be met with appropriate remedies as they arise.

10th. See that all causes of excitement and mental disturbance are carefully avoided, and keep the patient in the recumbent position for at least two weeks. Hodge advises that she pass the greater part of a month in this position, and we believe the advice good. Churchill says that "far more mischief results from premature exertion than from all errors in diet added together."

Because a large majority of women pass through their confinement without any unlooked-for difficulty, and convalesce without disease or accident, and because very many women of the laboring classes, after being delivered, perhaps, by some ignorant old woman, are permitted to be out of bed on the fourth or fifth *day*, and are even sometimes at the wash-tub, or other laborious employment, within the ten days which the more refined puerpera is expected to pass strictly in the recumbent position, and all this without any apparent* impairment of health—because of these things, we are apt to become careless, leaving our newly delivered patient too much to her own will, instead of giving her proper caution and instruction, by heeding which a life of torment, or even death itself, may be prevented.

We would urge, then, that the physician should, in all cases, give full and explicit directions for the care of his patient, and insist on these being carried out fully, seeing to it that the nurse shall be the *servant*, and not the *mistress*. Nor is it easy to sufficiently impress the puerperal patient with the danger of premature exertion, since serious accidents are comparatively rare. Women do not like to lie in bed when they feel that they are not sick; but it should be insisted upon, since it is much better that ninety and nine should submit to this inconvenience, and reap the benefit of it, than that one should perish from want of proper care.

A few words as to the *treatment of cases in which air has entered the veins*, and we have done.

1st. Remove clots or other obstruction at the mouth of the womb which may prevent the free exit of any pent-up air. Resort to pressure, and any other proper means that may be necessary to bring about a firm contraction of the uterus.

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* But *only* "apparent," since uterine diseases and displacements are quite common among laboring women.

. 2d. Resort to artificial respiration, "which, by keeping up the action of the heart, may lead to the propulsion of the spumous blood through the capillaries Electrization of the phrenic nerve has also been used.

3d. Always keep the patient in the recumbent position, which promotes the flow of arterial blood to the brain. Pressure upon the abdominal aorta, or iliacs, and upon the axillary arteries, has also been recommended for this purpose.

4th. Opening the right jugular vein is also recommended by surgical writers, in the hope of directly relieving the right side of the heart of an excess of venous blood.

5th. In addition to these means, brandy, diffusible stimulants, and all the remedies usually administered in syncope, are generally appropriate.

Preventive Measures.—Deliver the patient on her back. Give a good dose of ergot as soon as the child is born. Practise Crede's method, already referred to. Compress the uterus after the expulsion of the placenta, as directed, until the bandage is applied. Allow no clots to collect in the uterus. Direct the patient to keep the thighs approximated.

THE USE OF THE SETON IN THE TREATMENT OF SOME CHRONIC AFFECTIONS OF THE WOMB.

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(Read before the Medical Association of Central New York, at Rochester, June 18, 1872.)

In introducing the history of several cases of the treatment of chronic hypertrophy of the uterus by the passage of a seton through the neck of the organ, it seems proper for me to give the reasons which led to a new plan of treatment for a pathological condition well understood by gynæcologists, and for the remedy of which there seems to be a standard, if not routine, treatment.

There are many chronic conditions which are more or less of a departure from the normal state of the uterus, which lead to a change of texture or structure, the recognized treatment for these states being the use of caustics of greater or less potency.

It may not be expressing it too strongly to epitomize local uterine treatment as a plan of counter-irritation.

This seems to be the result of a persistent idea in the mind of every gynæcologist that the pathological condition before him is one of change of structure, each case differing more in degree than in type.

From the long existence and wide diffusion of this idea, it is what Herbert Spencer would call a fundamental truth.

An increase of the bulk of the womb may result from two causes: a persistent stasis of blood, the prime factor of which is a concurrent state of inflammation, and which leads to the organization of interstitial inflammatory deposit; and a defective involution of the organ following repeated abortions or labors. In order to give clearness to this statement, I have isolated these two leading conditions from all others of lesser value. In chronic hypertrophy of the organ other than mere engorgement, it is admitted, I believe, that one of two things occurs: either the muscular tissue itself has received a pathological increase, or the connective tissue has been the seat of organized growth. Virchow lays it down with all the emphasis of a law, that those elements are more rarely imitated pathologically which belong to the more highly organized tissues, "more especially to the muscular and nervous systems" ("Cellular Pathology," p. 92). To apply this law to uterine hypertrophy, it would therefore be the connective tissue of the organ which is the seat of growth. This also constitutes the discontinuous hypertrophy of Paget, who, without committing himself upon this question, makes two classes of hypertrophy ("Surgical Pathology," p. 350). Scanzoni claims that there is actual increase in the muscular fibres. This brief pathological notice will suffice to show the points to be met in the treatment. These points are to arrest the forces of hypertrophy, and to substitute those of atrophy—the absorption of the redundant material. When much of the increased specific gravity of the womb depends on blood infiltration, it also becomes proper to establish a source of drainage. The means to accomplish these ends are the actual cautery, caustic potash, potassa cum calce, the nitrate of silver, and the acid nitrate of mercury. Such milder agents as the tincture of iodine, chromic acid, etc., I will leave out as too mild to fulfil the indications. The theory of these caustic applications is in actual loss of substance, and in the induced absorption in the body of the womb, resulting from the inflammation. Briefly, the standard treatment turns upon the establishment of an issue either upon the neck, in the cavity of the neck, or in the cavity of the womb itself. In the secretion from the ulcerated surface we also have a means of drainage.

We see that the result gained is the same either in practice or in theory, and that in the treatment of these forms of uterine disease the seton is the therapeutical equivalent of the more potent caustics. We have in the seton the means of inducing sufficient inflammation to cause interstitial absorption in the body of the womb, and in the discharge of true pus which results we have an efficient means of drainage. In theory, also, the seton presents eminent advantages over the caustic or escharotic plan of treatment. Principal among these is the greater freedom from shock. Caustic potash or potassa cum calce always produces more or less prostration as an immediate result, even when the local pain is hardly complained of. In no case in which I have inserted a seton have I seen any prostration result. Another trouble is the frequent uterine colic and abdominal pain following caustic application, with or without any exertion on the part of the woman, and which were absent in my cases of the use of the seton, except in Case IV., and which I am inclined to ascribe in a great measure to fear inducing an hysterical state of the nerves, the woman having been told that an unusual treatment had been resorted to in her case.

The counts in the indictment against the more potent caustics have been presented by abler pens than mine, but I will enumerate those disasters which may follow their use, about which there is no dispute. If they are used by inexperienced hands, the neck may be obliterated, cicatricial bridles may form which will impair the future usefulness of the organ, or the canal of the neck may be permanently injured. None of these misfortunes will follow the use of the seton, the only question being, Does the seton possess equal value as a curative agent? and which question its use in four cases only will not enable me to answer.

The interstitial absorption induced by the inflammation of escharotics applied to the neck of the womb is attended by this drawback: there is a state of hyperæmia as a primary result; and, after the casting off of the eschar, an immediate effort to repair the injury. Many pathological conditions and processes are but modifications in the healthy conditions or functions of an organ. This, if we limit the pathological state to the deposition of tissue identical with the normal structure of the organ, is eminently true of the forces of hypertrophy and those of repair. Through forces not so very divergent we have an identity of result, an increase in the normal structure amounting to hypertrophy, and a deposit of the normal material amounting to repair. In the use of caustics to the uterine neck, we have often to modify the reparative process by the use of milder caustics, or chromic acid, or tincture of iodine. We have also to exert a constant watchfulness, to check any tendency to excess of repair, lest the permeability of the cervical canal becomes impaired. None of these objections have any weight against the substitution of the seton for the potent caustics as a means of inducing interstitial absorption in the hypertrophied mass of a womb. On the other hand, we have a constant state of irritation, uninterrupted by any reparative process, so long as the seton is present. Neither is there any danger of excess of inflammatory action, as the extent of its action is limited by the course and extent of the track of the seton. When the seton is finally removed, the liability of excess in the repair of the part is equally subject to the course and direction of the seton.

As a means of drainage of the hypertrophied parts, the seton, in theory at least, presents many advantages. We are liable to overlook the depletory value of laudable pus. To prove its value as a depleting agent, I have but to refer to a very common illustration. A part may be hot, congested, and hardened, but when suppuration has taken place, and the discharge of pus is once secured, we observe a remarkable change in the part. The hardened area becomes softened: the zone of redness becomes limited to the orifice of discharge, and the pain usually abates. The same phenomena attend the use of the seton. Its use in veterinary surgery, where it is used to open deep-seated abscesses, is a case in point. By referring to the history of the cases, it will be observed that the seton produced the same result in a hardened and congested cervix. So far as there is liability to danger from the use of the seton in gynaecology, future experience will have to determine. I purpose in this paper to come to no hasty conclusion, but, judging from the trial already had, I am inclined to think that the future augurs well for the safe use of the instrument in this department of medicine.

It is more idea than fact that the employment of the seton in this locality is more harsh than the use of the actual cautery, caustic potash, or potassa cum calce. It is because I believe that it is less violent in its action, less liable to be followed by accident, and more manageable, that I have used it, and now bring its employment to the attention of others. In the use of the potent escharotics, a mistake once made is made for ever. No power can restore a neck which is obliterated by the too free use of these destructive agents; but, if a seton is passed too deeply, or its presence is followed by undue inflammation, or if its presence is not tolerated by the parts, it may be at once withdrawn and all danger is averted.

Concerning the class of cases in which its employment may prove useful, future experience will have again to decide. Those cases in which I have employed it are those in which there was chronic enlargement of the body of the womb and of the neck. This was the leading condition which I wished to correct. Associated with this condition was evidence of chronic inflammation. Its range of usefulness, like that of caustics, may prove more extended; and, like them, it may prove of value whenever it is desired to substitute a new and more healthy action for the morbid process then going on. The liability of the womb to take on a condition of permanent hypertrophy after recurring abortions or labors was the state which led me to look for other means than the use of caustics to rectify it. I found as a rule that these cases were very stubborn under the ordinary caustic treatment, and I was thus led to the employment of the seton in my first case.

My method of inserting the seton is to expose the cervix—I find Nott's improved speculum superior to other methods of exposing the parts—and steadying the neck with the tenaculum, a fistula needle, armed with from two to four strands of surgeon's silk and held in a suitable needle-holder, is pushed through the tissue of the neck to about the depth of a quarter of an inch, and made to travel a course of about three-eighths or half an inch. When the point of the needle presents upon the opposite side, it is seized and the threads drawn through. The ends are cut about two inches long. The operation is then complete. There is but little pain, and no shock or bleeding; nor are sedative dressings necessary. Women have had the seton introduced at the Syracuse Free Dispensary and walked home without any trouble; a liberty it would be hardly prudent to permit a woman to take with herself after the use of potassa cum calce, or other caustic of like power. I examine the parts every four or five days, and, if the seton is borne too tamely by the parts, the threads of the seton are drawn so as to expose a new portion to the track of the fistula.

Case I.—Mrs. L. G., aged 37, a spare, worn brunette, the mother of three children, the youngest four years old, applied to me for relief from severe backache, bearing down and dragging in the groin, a profuse discharge from the vagina, oftentimes a frequent desire to urinate attended with a burning pain ; a sense of pain and heat through the hips after standing or walking any length of time. She suffers from the acidity of the stomach after eating, and was often prostrated with severe attacks of headache. These symptoms came on after the birth of her last child. Menstruation was painful, more abundant than formerly, and recurrent every three weeks. To the touch the neck of the womb was enlarged and tender, and harder than normal. Examined by the speculum, the neck was engorged and the os pouring out an abundant discharge. The sound penetrated to the depth of three and a quarter inches, and revealed a slight state of retroversion and tenderness. She stated she never had an abortion or miscarriage.

Nov. 7.—Exposed the os with a Nott's improved speculum, and introduced a two-strand seton of saddler's silk in posterior lip of the os. The pain was trifling, and but a few drops of blood escaped.

Nov. 10.—The posterior lip of the os was swollen and tender, and active inflammation had set up around the seat of the seton. Complains of more backache and bearing down than usual.

Nov. 16.—The track of the seton is now discharging a bloody serum, the neck quite sensitive to the touch, less red, and active inflammation confined to the neighborhood of the seton.

Nov. 18.—The orifices of the seton are now points of ulceration. Discharging pus. Cervical discharge less. Makes no complaint of unusual pain or trouble of any kind.

Nov. 22.—The ulcerated points are enlarged. The discharge free. The posterior lip smaller and pale, the entire neck having decreased in size.

Nov. 26.—Introduced a sound to about three inches in depth. Cavity of neck still discharging.

Nov. 30.—On the 26th the patient began to menstruate more freely than usual, there was considerable pain for the first day or two, when there was considerable abatement of the pain except on exertion, when backache was severe. On the whole, menstruation was less painful than usual.

Dec. 1.—On examination I found the seton had ulcerated its way out. The former track of the seton was now an ulcer about the fourth of an inch in depth and half an inch long, and discharging some pus. On touching the surface with cotton wool it bled. Touched the surface with nitrate of silver. The cavity of the neck was dressed with strong tinct. iodine.

Dec. 5.—The ulcer is healing rapidly. Tinct. iodine to cavity of neck.

Dec. 14.—Ulcer nearly healed.

Dec. 19.—Ulcer shows merely as a depressed line with redness. The neck is much reduced in size, and of healthy color, and normal resistance to the touch. Not tender on pressure. The sound penetrated a little less than two and three-quarters of an inch, without revealing any tenderness of the body. The cervical cavity is still discharging, but not so freely. Treated the cavity as before.

Feb. 3, 1872.—The patient still continues to menstruate about every twenty-one days, but less freely, and without pain except when engaged too freely about household duties. Os still discharging, but not so freely. Sound reached a depth of about two and a half inches. The seat of the ulcer is indicated by a depressed line. During the menstrual intervals there is a comparative freedom from pain or vesical disturbance. The general health has much improved.

Case II.—Mrs. McG., designated on the register of the Syracuse Free Dispensary as No. 1116, was admitted as a patient March 25, 1872. Appears much broken in general health. There is a history of repeated abortions, the last some three years ago. Has not been pregnant since. She has suffered greatly from pain through the hips, pain in the back, sudden distension of the bowels, a profuse leucorrhœa, strong bearing down, and inability to walk or stand any great length of time.

To the touch the neck of the womb was enlarged, hard, and tender, the os presenting as a deep fissure dividing the neck through its entire width. The sound penetrated three inches and a half, gave great pain, and its withdrawal was attended with a few drops of blood.

May 15.—The treatment at the Dispensary consisted of attention to the general health, and treatment to the cavity by strong tinct. iodine two or three times a week. This was continued up to this date, with some slight improvement generally, but no marked change locally.

May 17.—A seton (silk threads) was introduced thoroughly through the anterior lip. No hæmorrhage and but little pain. Present Dr. Frank H. Butler.

May 20.—Examined at the Dispensary. Anterior lip inflamed and tender. Cervix discharging as usual.

May 22.—On examination the neck is congested and tender; less cervical discharge. Complains of severe pain in the back, and some pain in the hypogastrium. No pus discharging from the seat of the seton.

May 27.—She states that on the 25th a small amount of blood escaped, and since a slight discharge of bloody serum. The neck was found swollen and livid, but much softer to the touch. Cervical discharge has disappeared, backache less severe, hypogastric pain comes on in paroxysms of short duration. The track of the seton is discharging bloody serum; sound introduced to the former depth and usual amount of pain.

May 29.—Discharge of pus from the seton first observed to-day. Tenderness of neck much less, the redness of the anterior lip much lessened, pain in back as usual, and is the chief source of annoyance.

May 31.—Discharge of pus very free. Neck much lessened in size and redness. The former discharge is again making its appearance from the cavity of the neck, hypogastric pain has disappeared, backache much less.

June 3.—The neck now presents a pale surface reduced in size. Points of entrance and exit of seton well ulcerated. Discharge from the cavity of the neck is free. Sound gave no pain on introduction, and reached a depth of two and three-fourths of an inch. She is now following her occupation, that of paper sorter.

June 7.—Patient has had an attack of diarrhœa with great pain and vomiting, and has been confined to the house. The attack has gradually reduced her strength. The seton has partly ulcerated its way out. Discharging pus, and former discharge from the neck still free. Cervix soft and pale, except redness around the margin of the ulcers. Sound reached a depth of two and three-fourths inches. Complains of severe backache since her attack.

June 10.—The seton is removed. About two-thirds of its track has ulcerated out. Condition of neck has not changed since last entry.

Although the womb and its cervix is considerably reduced in size, without tenderness either on exploration of its cavity or by the touch, still the patient is in a very unsatisfactory condition so far as the subjective symptoms are concerned. Backache is often present, and hypogastric pain sometimes after much exertion. Vesical disturbance less often present, but has been present on one or two occasions after exertion.

She confessed to-day that she had received the visits of her lover during the first part of the seton treatment.

Case III.—Dispensary case, No. 43, Mary Whaley, aged 43. Admitted Jan. 27, 1872. Twice married, first at the age of sixteen years, mother of three children, youngest six years old. Her trouble began four years ago, by pain in the back and hypogastric regions, dragging in the groins, bearing down, and irregular menstruation. Has not been aware of menstruation in three months. To the touch the womb was low down, the cervix hypertrophied and hard. Through the speculum the neck was congested, the os open and large, its edges slightly everted and studded with elevated follicles, and the cavity of the neck throwing out an abundant white-of-egg secretion. On the introduction of the sound a penetration of three inches was reached, and a state of slight retroversion proved. The general health was bad; bowels constipated, tongue coated, skin sallow and dry, and a constant frontal headache present.

A general tonic plan of treatment was adopted with pot. iod. grs. iii. t. d. Locally, strong tr. iod. was applied to the cavity; the neck being pencilled with argent. nit.

Feb. 14.—The condition of the parts very nearly the same. A seton was passed through the posterior lip of the os. There was no hæmorrhage, and very little pain.

Feb. 16.—Saw patient at my office. The neck of the womb was softer and swollen. The vivid redness was confined to track of seton. Rather more backache and bearing down than usual. Gave a suppository of ¼ gr. morph. s.

Feb. 19.—Walked to church yesterday; the track of the seton is discharging apparently pus. The neck has lost its swollen and livid appearance—the thread causing two well-defined points of ulceration. Makes no complaint of the treatment.

Feb. 21.—The seton thread was moved slightly through the wound. The neck is much reduced from its former size, and pale. Makes no complaint of backache or bearing down.

Feb. 24.—Removed the seton. Track of seton much ulcerated. Neck pale and one-third smaller, but its cavity still continues its discharge. A probe penetrated two and a half inches and gave no pain, and without marked retroversion. Complains of backache after walking or standing. Touched the ulcers with argent. nit.

Feb. 27.—Ulcers healing rapidly. Pus discharge ceased.

March 8.—The patient is decidedly better and has ceased her attendance at the Dispensary. General health is much better. The cervical discharge is the most marked symptom of any uterine trouble.

June 8.—Dr. Frank H. Butler visited this case today as an out-patient. She is suffering, he reports, from pleuritis. I understand he made an examination, and describes the uterine neck of normal consistency and size. The woman says she is much better, the only symptom of uterine derangement being the cervical discharge.

Case IV.—S. H., single, aged 32, a care-worn brunette, hair streaked with gray, has led an irregular life; says she never had an abortion; has profuse cervical discharge, pain in the back, bearing down, and pains of a neuralgic character in the right ovarian region, often darting down the thigh. The neck of the womb was tender, enlarged; the os patulous and pouring out an abundant discharge. Menstruation is irregular as to time and exceedingly abundant. A sound penetrated three and one-fourth inches, giving some pain, and followed by a few drops of blood. This state of affairs has existed for three years, but has gradually been growing worse.

Oct. 9, 1871.—A seton was introduced into the posterior lip of the os. The patient was informed of the nature of the operation. But little pain was occasioned; the patient walked home.

Oct. 10.—Was called at 4 a.m. to see the patient, who had been in great pain of a neuralgic character, radiating over the whole abdomen. This pain came on shortly after her arrival home. She had taken morphine freely and had procured but little rest. Gave a suppository of morphine and belladonna, and fomentations to the abdomen.

5 p.m.—The patient has had considerable pain during the day. Abdomen slightly tender. The neck of the womb on examination was tender. I deemed it proper, under the circumstances, to remove the seton, which was accomplished without the introduction of a speculum.

Oct. 11.—The patient passed a comfortable night;

says she is free from pain. She lays her attack to the seton. I am inclined to think that, had the patient been ignorant of the nature of the operation, the irritation resulting from the presence of the seton would have been much less, as she was very timid as to the seton treatment, and in addition to this she possesses an hysterical imagination.

This concludes the history of the cases so far as I am able to report at present. Three other cases are now under observation, but the cases have not been under treatment a sufficient length of time to make the report of value. I trust I may be able to make a further report upon this subject; when, if I see reason to change my present opinion of the value of the seton as a means of cure, I shall frankly make it known.

REMARKS ON THE DIAGNOSIS AND SURGICAL TREATMENT OF FIBROID TUMORS OF THE UTERUS.

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IT would, perhaps, be difficult to prove beyond question that, in regard to the whole subject of therapeutics, viewed in its broadest aspects and measured by general results, we have made any very positive advance during, let us say, the last century. Certain it is that our therapeutics have not kept pace with our advance in diagnosis, though it may be that we have hardly yet begun to realize the good which must, I think, result from greater accuracy and precision in this respect. In the present day, I much fear that the spirit of infidelity, which is manifest in every department of knowledge, and which is certainly not confined to religious thought, is doing great harm to practical medicine. At the same time, no doubt, the injunction to "prove all things" has in it the germ by which ultimate success is to be achieved, and without which *truth*, which should be the end and aim of all our investigations, not only into the phenomena of disease, but also into the action of remedies, can never be advanced. There is, however, a wide difference between the spirit which seeks for truth, and haughty unbelief, which is never so satisfied as when it is employed in the work of destruction.

I have been anxious to make these few introductory remarks, because, while I am a firm believer in the value of many drugs, and am a staunch opponent of those who appear to think, if we may judge by what they write and say, that drugs are of little or no use for the vast majority of diseases, I yet am bound to reiterate my conviction, which I have already expressed on more than one occasion, that the value of drugs in the *cure* of the diseases which we are to consider in this paper is so infinitesimally small as to be, like the homœopathic dose, absolutely imperceptible, even to the keenest analysis. At the same time, no doubt that in this as in other instances of disease there is a proper and legitimate use of drugs, and within those limits we should endeavor to restrict ourselves, if, on the one hand, we would avert disappointment, and, on the other, be true to the art and science of medicine. I do not propose, however, in this paper—for the space at my command would probably not admit of it—to consider what I call the medical or drug treatment of fibroid tumors of the uterus. This, indeed, is a very large and wide question, and involves the consideration of the whole subject of the symptoms of these growths, inasmuch as, in my judgment at least, and guided entirely by my own experience, I should say that the only object of medical treatment in these cases resolves itself into an attempt to combat symptoms as they arise, and does not busy itself with futile attempts at impossible cures. My object is rather to occupy attention for a few minutes, by detailing some of the modes of surgical procedure by which we may hope to rid our patients of these growths. I conceive that this is a far more important topic than the former. I know that in judiciously selected cases it gives much more satisfactory results; and I hope to be able to convince my readers that the methods recommended are quite practicable, though in some cases, perhaps, a little difficult; yet they are within the competence of any one ordinarily acquainted with operations on these parts.

But, before detailing these several proceedings, I am anxious to explain what I mean by the term "judiciously selected cases," because, as will appear more clearly by-and-by, it is obvious that not all cases can be so treated. Many, indeed, are hopelessly beyond the reach of either medical or surgical treatment, and it is of the utmost importance that we should be able to recognize, with at least tolerable certainty, the cases in which we may reasonably hope for success.

It is an established rule of practice that all cases of intra-uterine tumors, in which the growth is possessed of a distinct pedicle, and by means of which it is attached to the uterus, are fit objects for surgical interference. Indeed, it would be nothing short of a dereliction of duty to leave such a case untouched. I need not, therefore, refer to them, for the surgical conscience of our profession has already determined its action in this matter. In like manner, it is generally agreed that, in all those cases in which the growth proceeds, not into the uterine but into the peritoneal cavity, not to the mucous but to the serous surface, the rule here should be, not, as in the last case, to interfere, but, on the contrary, to leave it alone. I am by no means satisfied, however, that such a rule does comprise the whole of our duty in this matter. I very much question whether, in not a few of these cases, where there is such great suffering and distress as so commonly happens with these sub-peritoneal uterine growths, we ought not at least to give the patient a chance of cure and relief to her distress by opening the abdomen and removing the growth in that direction. I know, of course, that such a proceeding is by no means free from risk; on the contrary, that it is full of risk. But notwithstanding this, I am prepared to recommend its adoption in certain well-selected cases, and I think that the two points which should mainly guide our decision are, first, the severity of the patient's distress; and, secondly, the conviction, arrived at after the most careful and accurate examination we can make, that the tumor is so placed with regard to the uterus that its removal is, if I may say so, anatomically possible without any serious injury to the uterus. Not that I should be particularly anxious about the integrity of the uterus, so far as that organ alone is concerned, but because I know that in the operation alluded to the risk will be almost in exact proportion to the amount of injury inflicted upon the uterus. If that be slight, as it would be if the tumor were distinctly separate from the uterus by a pedicle, then the risk would be comparatively slight. On the other hand, if the attachment of the tumour to the uterus were extensive, more of that viscus would be injured by the removal, and the danger would be proportionately increased. The risk as regards the peritonæum would, of course, be the same in either case; and, seeing what that tissue will stand in the case of ovariotomy, I confess I am not disposed to be influenced very much by any considerations with regard to it, if for other reasons the case seems suitable.

Passing by the further consideration of these two groups of cases, the submucous or intra-uterine and the sub- or intra-peritoneal, we come next to that large, more common, and more mischievous group of cases which lies as it were between the two former, and which occupies what I may call a very *terra incognita*, upon which, no doubt, many a battle will be fought in the future between those who hold that here nothing surgical can be done, and those who are disposed, as I most certainly am, to recommend more decided and more frequent resort to surgical interference than has hitherto been practised.

In order, however, that a wise advance may be made in this direction, it is absolutely necessary that the utmost precision should be arrived at in regard to the *exact* situation of the tumor and its relation to surrounding parts. There are some tumors which, though not exactly subperitoneal, and certainly not pedunculate subperitoneal, are yet so close to that aspect of the uterus, and have so very little which separates them from the peritonæum, that any interference is necessarily attended with very great risk. The case is very different when the tumor has its thickest covering on the peritoneal aspect, and its thinnest on the mucous. The question, then, of infinite importance is, Can we tell, and, if so, how, to which of these two classes any given case belongs?

I may premise that, in most if not in all cases, fibroid tumors of the uterus are enclosed in a distinct capsule, from which they may generally be separated without much difficulty, so that, if we can once get through the capsule into what I may term the intra-capsular space, we may reasonably hope to be able to detach the tumor from its surrounding connections, and so to effect its removal.

Now, in reference to the question which I just now propounded, as to the relation of any given tumor to the peritoneal or mucous surface, it may be stated, as an axiom, that, in general, the more subperitoneal a tumor is, the less will the size and form of the uterine cavity be interfered with, while, on the other hand, the more submucous it is, the more will those relations be distorted; so that, given a uterine tumor, if examination with the sound shows that the form and dimensions of the uterine cavity bear a very close and fair relationship to the tumor, as it is supposed to be—in other words, if a careful examination under chloroform, which I greatly prefer, reveals a tumor the size of a small cocoa-nut, for instance, and the use of the uterine sound shows that the cavity of the uterus measures, say, four or four and a half inches, and that, further, the sound seems on passing along the cavity of the uterus to go over some round body, which an experienced hand can readily determine—then the fair presumption is that the tumor in question has grown chiefly in the direction of the uterine cavity, and, though it may have a very extensive attachment from its distinctly sessile character, yet it is one with which we may fairly interfere, and with a very reasonable hope of success.

On the other hand, if, having made out to our satisfaction the existence of a tumor of the size I have de. scribed, we yet find by the uterine sound that the cavity of the uterus is *not* proportionately altered either in size or shape, then we may presume that the growth is much more subperitoneal than submucous, and discretion recommends that such a case be *not* interfered with. There are sometimes other local signs by which the relations of the tumor to the uterine cavity or peritonæum may be gauged. For instance, very frequently, when tumors have grown chiefly towards the cavity of the uterus, the os will be found more or less patulous and the cervix to have expanded upon the growth. On the other hand, if the tumor be chiefly in the peritoneal direction, then the os and cervix will be little, if at all, altered. Again, I have observed, as a general rule, that the variations in the two chief symptoms of these tumors, namely, hæmorrhage and pain, afford very valuable and fairly reliable indications of the locality of the growth; thus, subperitoneal tumors are generally accompanied by a good deal of pain, but not much hæmorrhage, while those which are situate nearer to the cavity of the uterus give rise to very free bleeding, but are not, as a rule, painful.

There are, of course, many other points in regard to the diagnosis of these tumors to which I might refer, did time permit; but the chief are, I am satisfied, those to which I have alluded, and their especial value lies in their bearing upon the point which I am chiefly anxious to bring under notice, viz., the surgical treatment of such growths.

Having, then, determined, as nearly as we can, the situation of the tumor, and being satisfied that, though not intra-uterine, in the ordinary acceptation of the term, it is certainly not intra-peritoneal or subperitoneal, but rather one of the interstitial character, we may proceed to consider its removal; for I am prepared to assert that, contrary to what has been the rule in practice hitherto, we are fully justified in attempting the removal of these tumors even though they be not intra-uterine or submucous, but are situate in the substance of the uterus itself, provided, of course, that we set to work in a judicious way and proceed regularly, according to a definite plan, with a distinct principle to guide our proceedings.

Now, the plan which I recommend for adoption in these cases is that which, so far as I have been able to observe, Nature herself points out as the one which ought to be followed, for we may be quite sure that we cannot follow a better teacher in any question of therapeutics. That plan is, first of all, to prepare the passages for the expulsion of the growth, and, secondly, to detach the tumor from as much of its surroundings as possible; so that, by making of it a foreign body, Nature may aid in its removal, as she would, for instance, in the case of a dead fœtus or a mole pregnancy, or even a uterine polypus. Lastly, that in this process of removal, when Nature has been given fair play, we should come to the rescue with the écraseur and remove at once what might otherwise be the work of many months or years.

This, then, is the plan; these are the principles: and to show that I am not advocating an impossible proceeding, I may state that I quite lately had under my care a case in which the tumor was completely embedded in the substance of the uterus, so much so that the os was not dilated in the very least, yet I determined to carry out the plan if possible, though at first my hopes of success were rather slender. I had the satisfaction, however, after three or four operations of the kind I shall presently describe, of completely removing the tumor, which was of the size of a small cocoa-nut, and that patient is now perfectly well.

At the present time I have two other cases of the same kind, but in both the tumor is much larger. I have commenced with the same plan of treatment in these cases, and I have every reason to believe that I shall be able to effect a cure.

The first step in the process is to prepare the passages for the removal of the tumor; for this purpose *space* is necessary, and, as dilatation is of little value in my experience, because the parts soon close up again, I recommend free division of the cervix uteri in one or more directions. For this purpose I use a strong single or double-bladed metrotome; the latter I have had made expressly, and it may be applied either laterally, antero-posteriorly, or both. Care must be taken to prevent union of the parts afterwards by well plugging the cervix with oiled lint or cotton wool. As soon as the cut surfaces have healed and all is quiet, we may proceed to the next step, which consists in cutting, or, better still, breaking with the finger, through the capsule, and little by little detaching the tumor from its bed and from its surrounding connections with the uterus. This of course requires care, but I am quite satisfied that it can be done safely, and with no more difficulty than attends many other operations. Indeed, I have been agreeably surprised at the facility with which this part of the operation can be conducted; once get into the space between the tumor and the proper uterine tissue, and it is surprising how easily it may be, as it were, shelled out from its attachments. I do not think it advisable that much of this detaching process should be done at one operation; it is far better to do it little by little, repeating the operation again and again, and during the intervals efforts should be made, by the administration of ergot, borax, cinnamon, and other so-called axytoxies, to secure contraction of the uterus, so as to favor Nature's method of expulsion. Galvanism is also another agent of great power in this respect, and a firm bandage is of service in cases where the tumor is large, and projects well into the abdominal cavity. I have often been surprised to find, when once the tumor is in great part separated from its attachment to the uterus, how vigorously the uterus will contract upon it as upon a foreign body, and how rapidly its expulsion is subsequently effected; so that a tumor which before the cervix was divided was high up in the uterus, far above the os uteri, and completely embedded in the uterine wall, may, in the course of a few weeks, after division of the cervix and detachment of part of the tumor, be found completely through the os uteri and occupying the vaginal cavity. This I have seen again and again.

If after division of the cervix, and detachment of large portions of tumor, and the employment of agents with a view to promote its expulsion, the tumor is by this means brought more and more within reach, while at the same time it has become by our detaching process more of the pedunculate variety, we may then complete the operation by the employment of the écraseur. For this purpose, the tumor should either have become protruded, in part at least, into the vagina, or, at all events, its detachment from the uterus should have been so conducted that the mass of the tumor is distinctly within the uterine cavity, capable of being surrounded and grasped by the hand, and of being encircled at its base by the wire of the écraseur.

Such then is, in its main features, the plan which I strongly recommend for adoption in the class of cases I have described, and which, I am satisfied, is capable of producing the best possible results, especially in those cases which have hitherto been regarded as beyond the reach of surgical art.

The after-treatment of these cases is very simple. The first thing to do is to secure firm contraction of the uterus after it is emptied of its contents. This is necessary not only to prevent hæmorrhage, but also to avert, or at least to make improbable, the occurrence of septicæmia. The latter object will be still further secured by frequent injections of warm solutions of permanganate of potash, carried well up into the uterine cavity. In regard to medicines, I know of none which are either useful or desirable, except it be opium, and this I regard as of a greater value than any or all other medicines put together. I am also very partial to the employment of hot linseed and laudanized poultices to the abdomen in all cases of serious operations upon the uterus where there is a liability to pelvic or peritoneal inflammation. No one doubts the propriety of this treatment when peritonitis is really established, and if it does not, as it probably cannot, avert its occurrence, it at least will exercise its beneficial influence in the very commencement of the attack, and, if it possesses any therapeutic value at all, it is surely best that its influence should be felt when the inflammation is limited to its initial stage.

I have endeavored in the foregoing remarks to sketch, as briefly as possible, a plan by which I believe we may successfully treat a very troublesome and not unfrequently fatal class of affections. I will only add that our success must depend mainly upon, first, the accuracy of our diagnosis in regard to the exact position of the tumor; and, secondly, upon the care with which we adhere to the several details and order of the plan now submitted for consideration.

A TWIN MALFORMATION (HYPOGASTRODIDYMUS) DELIVERED ALIVE.

By DR. ALEXANDER KLEIN, of Cskathurn.

Translated by DR. BERNHARD GRUNHUT, of New York, from the *Vienna Medical Press.*

AMONG the rarest twin-malformations, with double head and body, may be classed the Hypogastrodidymus (Rokitansky) or Ischiopages (Geoffroy), which are united at the abdomen, and in which the four extremities, two on each side, project at a right angle.

Of these malformations there are so far known to have been born alive:—I. Thoraco-gastrodidymus R. (Hyphodynæ G.), known as the Sardinian Sisters, Ritta and Christina, in which there were two heads and necks, the breast and abdomen being united in one, and four upper and two lower extremities. II. Pygodidymus R. (Pygopages G.), known as the Hungarian Sisters, Helena and Judith, in which there were two well-formed, individual heads, which were united at the hips or coccyx. III. Thoracodidymus R. (Xiphepages G.), namely, the Siamese Brothers, who have two separate bodies, joined only in the neighborhood of the sternum.

The malformation here about to be described is known as the Hungarian Sisters, Sophia and Maria (Zsnidaries), being the first children of a perfectly healthy young mother, who enjoyed perfect health up to their birth, which took place at the end of the ninth month of pregnancy. They consist of two perfectly developed heads, lying in the longitudinal axis, with two upper and two lower extremities projecting outwardly at a right angle, a common abdomen, and a navel in the form of a cross.

I. Sophia, the elder, born on the 6th of September, 1871, at 11 o'clock P.M., in a head presentation. The head lay outside of the vaginal walls for about thirty minutes before labor-pains again commenced, when, to the surprise of the surrounding attendants, there were gradually delivered four feet, then two hands, and, finally, to the great amazement of all, another head.

II. Maria, delivered by body presentation. Very soon afterwards the usual cry of the new-born was heard proceeding from the two throats, and, after the *single* cord was tied, *one* placenta was delivered.

Both children were baptized in the church, whereupon they passed to the care of a surgeon of the village. During the time that they remained alive, first one child and then the other showed signs of suffering, finally the second-born died first at two o'clock on the night of the 8th of September, and the elder, after passing four hours in continuous death-spasms, finally died.

I received the malformation about three weeks afterwards in a leaden vessel filled with alcohol.

In consequence of a dispute arising between the above-named surgeon and a layman who claimed to have purchased the children from the parents, I did not have the power to make a detailed anatomical examination. I may say, however, positively that the head and thorax were not abnormally formed, for the heads show two well-formed, individual features, while the trunk is common.

Of the highest interest, after the description of outward parts, is the opening and preparing of the abdominal contents, which I have undertaken. The length of the malformation, measuring from the vertex of one head to that of the other, is 42 centimetres. Both heads are covered with hair; the nails of fingers and toes of both well formed; the extremities easily movable: the back flat. Excepting a few hypertrophies of the skin, the size of a hickory-nut, of the right ear of the first, there is nothing abnormal to be noticed about this portion of either body.

The lower extremities are well formed, and, at first sight, seemed as if they belonged to one individual, because the symphysis is well marked on all sides; but on closer examination the fact is revealed that the feet of each child project outwards at a right angle. In the individual marked *a*, the external organs of generation are well marked as belonging to the female sex; the labia majora and minora are pretty large; the vaginal entrance perforous throughout, as detected by the probe. No clitoris can be found; below the posterior commissure is the rectum, from which meconium was discharged. While at anterior view the genital regions present that of a well-formed individual, the posterior aspect is not so well developed, and, instead of the fulness of the gluteal region, we have only a sloping off downwards from the back.

In individual marked *b*, the genitals are not well developed, there being but a representative of the female organs by two rudimentary skin tubercles, with a shallow slit between them.

The abdominal cavity of I. at first sight looks normal; but in II. there is directly seen an abnormality, inasmuch as the two kidneys have grown into one another, and exist as one. Thin cords (ureters) lead from the kidneys to the urinary bladder; but there was no outlet to the bladders. Concerning *b*, there was nothing abnormal to be noticed. The intestines were altogether normal, there being even the sigmoid flexure in each cavity; the rectum of each side opened at a common point in *a*.

Finally, it may be deduced from the foregoing that the progressive development took place more perfectly from *a*, and that the lateral development commenced after the union of the two embryo. I have no control over the further destiny of these subjects. I held it, however, to be my duty, by a description as able as was possible for me to give, to inform the scientific world concerning them, and not to allow—alas! as so frequently happens—such interesting specimens to be concealed from the eyes of science.

THE USE OF ELECTRICITY IN THE TREATMENT OF THE DISEASES OF CHILDREN.

By Dr. ULLERSBERGER, Paris, France.

(Prize Essay, continued from Vol. IV., No. 1, May, 1872.)

Partial paralysis of children has always excited the attention of the physician, particularly those who are interested in pædiatrics. It was a difficult subject for them, which is a sufficient reason for augmenting the value of electro-therapeutics. Their importance results from the fact that they are founded on some affection of the spinal marrow; such diseases are more prevalent between the ages of six months and two years. Our assertion is proved by their nosological definitions. They are, essential paralyses (Rellet), idiopathic paralysis (Bouchut), fatty paralysis of childhood (Duchenne), paralysis of dentition, rheumatic paralysis, etc.

Paralysis Diphthérique.—Duchenne, Jr., reports such a case in his report, s. i. x., p. 194, l. c. "Diphtheritic patches, umbilicated, general paralysis lasting two days."

Paralysis of the pharynx and the muscles of respiration in a girl of four months, cured by Faradization in eight days.

Paralysis of the Facial Nerve.—A boy, aged eight years, named J. Hamilton, was received in the Hospital Adelaide at Dublin, Nov., 1867, under the care of Dr. Richardson. A little more than a month before, he had suffered from pains behind the angles of the right jaw, and one morning on waking the right side of the face was paralyzed.

None of the ordinary symptoms were absent, nevertheless there was no deviation of the tongue or uvula. They commenced Faradization by the current of the second order, the 28th of November, continuing regularly during December, January, February, and part of March. The contractility was diminished, and sensibility to touch was less than in the healthy part. In the beginning the disease was rapidly ameliorated, but later the improvement was slower, and towards the end of the month of March two attacks of fever occurring suspended the use of electrization. Towards the end of April it was resumed. In the first week of May he could close the right eye at will, and after some further applications of electrization he was dismissed from the hospital, after having been under treatment for six months.

Dr. F. R. Barwinkle, of Leipsic, reports a case of *facial neurotic atrophy* in a girl of two years, the half of whose face was backward in its development, while the infra-orbital nerve was paralyzed. In that region, the skin, the adipose tissue, the muscles, and, above all, the bones, were in a marked state of atrophy. They could not perceive any change in the motility, in the sensibility or the secretions. Barwinkle thought there might be inflammation of the spheno-palatine ganglion, and endeavored to affect this nerve by the electric current. Thirty seances, as well as Faradization of the atrophied skin, obtained no real result. At the end of three years, during which only revulsions were employed, the atrophy had not grown worse. It had rather diminished in the soft parts.

We have not placed before our readers the cases of neuroses, of neuralgic, neuro-spasmodic, and neuro-paralytic forms. We have introduced into our memoir the different varieties of varying degrees, and numerous etiological and nosological complications, and the most superficial comparison should show us that the therapeutical application should necessarily modify itself according to the different types and degrees.

It is an absolute fact that the electric apparatus to be employed should exactly respond to the therapeutic ends, and in consequence be subservient to certain rules.

1. It should be able to furnish currents of a force applicable to difficult cases.

2. The force or the degree of the intensity of the current should be controlled at pleasure, and in an easy manner, as well as by a regular progression.

3. The apparatus should be constructed so as to furnish two currents, that is to say, the primary current (extra current) and the secondary current.

4. The currents of a complete apparatus should be capable of being modified in relation to their succession.

IN DISEASES OF SECRETION AND EXCRETION, the effects of the permanent electric current on the great sympathetic nerve, and on its functions, are sufficiently established by trials and experiments in electro-physiology, and especially by those of Cariclere, Jr., and Filippo Litane. As we all know the important part the great sympathetic fills, and as it enters into so many functional connections with the cerebro-spinal system, it will be well to familiarize ourselves a little with the following established facts of experimenters:

1. A permanent electric current increases the activity of the circulatory force. It increases it sevenfold when directed on the sympathetic of a healthy individual of medium strength and age.

2. To the degree and in proportion to the acceleration of the circulation, so does it augment the power of the circulation for its extensive physiological purposes.

3. It increases the secretion of urine, urea, and uric acid—one a quarter, the other a third, and the last a half.

4. It strengthens the gastro-intestinal functions—and specially facilitates assimilation.

5. We can confidently affirm that continued and energetic influence on the great sympathetic stimulates the organic functions.

The secretions and excretions can hardly increase without a supply of fluids more or less great towards the organs of secretion or excretion

The electric influence operates by congesting the parts concerned, and this explains to us how it is accompanied with success against muscular atrophies, especially when the electric current is suitably conducted.

This effect is founded on a special activity of organic transformation in the muscular tissues, and this action explains how opposite hypertrophic states can be restored to their normal condition.

It is again Maurice Benedict who gives us a case that will substantiate our theory. He had charge of a boy eleven years old. This boy had before suffered from convulsions, which reappeared later. Before the treatment he was lame, suffered from hypertrophy of the muscles of the leg, of the muscles of the pelvis, of the latissimus dorsi, especially of the left side. The author not giving any ultimate details of this case, it is to be supposed that it was treated with full success. The second case is that of the son of a peasant, aged eight years, who could not sit down; his walk was "hamstringed," and he was obliged to walk on his hands and knees. This little fellow suffered from marked hypertrophy of the calf of the leg, of the flexors of the thigh and the left sacro-lumbalis. The external portions of the deltoid muscles commenced likewise to atrophy, as well as the muscles of both legs. After a treatment of six months he could run all day without inconvenience. In a third case he speaks of a girl aged eight years, whose lumbar vertebræ were sunken, whose lumbar muscles took an irregular direction, the two sacro-lumbalis muscles paralyzed and atrophied, while the muscles of the hip and glutei were markedly hypertrophied.

Amelioration by Electrization.—We have drawn a certain analogy between *atrophy* and *hypertrophy*, notwithstanding the difference, or rather the pathological opposition; the two states being founded on anomalies of local nutrition, which, on the other hand, is very closely allied to the process of nutrition.

SECONDARY PARALYSIS AND PARALYTIC COMPLICATIONS.

Two chemical cases, which, we believe, should have been submitted to the electric medication, prove to us at the same time that in certain cases it is the only treatment.

The following cases prove to us that its indications are very positive:

CASE I. *Paralysis after Scarlet Fever.*—Jane W., aged five years, complained of headache, which was succeeded next day by a red eruption on the breast and the nape of the neck. On the morning of the same day the child became aphonic and remained so. Drs. Shepherd and Park found her on the morrow in bed with her sister, both covered with the eruption, without any anginose complication. The sister convalesced fully, while Jane remained aphonic and paralyzed soon after the eruption had entirely disappeared. Twenty-eight days after the period of invasion, she was taken to the hospital. The examination revealed this: At the age of twelve months, when nursing, she had two convulsions, which were once afterwards repeated. Whenever frightened she fainted. She had often incontinence of urine during the night. Before this, she had neither suffered with intestinal worms nor other diseases. On entering the hospital she was thin and excessively dirty, then aphonic and paralyzed. When taken from the bed to be placed on her feet, her legs failed her, the head and arms fell forward, and hung in that position. In asking her to speak, she blew through her lips, and in trying to make her write on a slate, she succeeded only in scratching some illegible signs. She remained three weeks without change of symptoms. They perceived only that she was voracious, a circumstance rarely found in cases of chorea, or following an ordinary paralysis. After this she commenced to improve rapidly. She found herself able, when supported (and although her head still hung forward, and her hands and fingers hung) and resting on a chair, to walk, she stretched her legs, rested the heel and sole of the foot, and followed with her eyes her little exercises. When stronger, her movements resembled those of locomotor ataxia. In proportion as the above movements were regulated, she became also more intelligent, was more attentive to those around her or who passed through the room, and was pleased when spoken to. Eighteen days after her residence at the hospital, when asked to say the word "egg," she could only distinctly articulate the letter "g," and some days after she succeeded in intoning the word "goo" instead of "good-morning!" The other pathological symptoms diminished by degrees one after the other, and at the end of a couple of months she was able to play with the other children, her language and movements differing from the normal state.

During all her sickness but a trace of albumen was found in her urine, and the paralysis was not marked more on one side than on the other. They had wished to find some analogy with these paralytic symptoms and the sequelæ of diphtheria, and were content to put the child upon simple regime. Passing over any criticism of this treatment, we will only appeal to all our readers if such a case did not offer a brilliant indication for electrization.

We will yet go further with our questions. How many cases of infantile paralysis have lost their indications, positive and rational, in the non-use of electrization?

Their number would form a large table, numerical and statistic, from Europe to the extreme of America, a fact which enables us to assert positively, in all the immense ethnical pathology, electrization should be naturalized as a therapeutic agent in this domain, and pædiatrics should have its special rights. We will now give a second case to support what we have said.

CASE II.—Characterized by general weakness, œdema, and paralysis; reported by Messrs. De Ferriera, of Lima, and Jayme P. Brichio. The little negress, Maria de Marajo, aged seven years, daughter of poor parents, lived for some time at Para, having previously lived in unhealthy regions. During dentition she had been subject to convulsions, and later to eruptive fevers; several times she had been seized with paroxysms of fever, and had also suffered from intestinal worms. She was a feeble child, and, nevertheless, had not a lymphatic constitution, on the contrary, a lively expression. Her actual condition was then intense fever, tympanitis, headache, suadamina, and muttering delirium; her tongue was covered by sordes; her belly soft and swollen; according to the report of her mother the fever had remissions. She had then paroxysms of fever; they had prescribed a diuretic; the next day tartar emetic, which produced copious stools and expelled at the same time a worm. During the day she complained of pain in the joints; she passed the following night in sleep. The next day, intense fever, paroxysms of convulsions, expulsion of a worm. The joints were swollen and the body was painful; a dose of castor-oil with essence of lepidium expelled during three days a great quantity of worms, since then the fever and delirium notably diminished. They gave her quinine, which dissipated the fever, but the articular pains increased so that the poor little thing had not a moment's rest. She cried and groaned at all times; she would not permit herself to be covered; took broth; the slightest movement occasioned terrible pains, which regularly brought on tetanic convulsions. The eighth day of the disease the pains still existed, showing themselves with more intensity on the left side than the right, the contractions also were more on the left side during the intervals of these last. The patient felt a pain in the iliac region, which embarrassed respiration; as long as this pain and dyspnœa, she straightened her neck as it is seen in opisthotonos. Auscultation showed a normal heart movement and pulmonary functions; the patient did not cough. Pulsation of the epigastrium was painful, and produced the sign of tightening around the body; the hepatic region and the belly were swollen. With the tenth day of the disease the swelling of the joints entirely disappeared on the right side, while that of the left, which was paralyzed, did not change. The left hand was semi-flexed and could not grasp any object; the foot of this side was shortened; pressure on the side of the leg produced severe pain. In the palm of the hand and sole of the foot felt a tingling; sedative potions could not counteract the sleeplessness; the groans continued and were increased during the night. On the twelfth day the poor little child complained of trouble about the throat, which interfered with language and deglutition; this state had intervals; the soothing potion was continued. The state of the patient on the eighteenth day was still more suffering, the pains having increased, especially through the night. The paroxysms of this semi-chorea became more frequent, as well as those of the cardialgia.

At the thirtieth day the patient was slightly better; she could sleep for several hours; the cardialgia disappeared, but the pains in the calves of the legs still remained, even increasing under pressure the paralysis of the left side the same; while the œdema of the feet had diminished, the epigastrium remained painful on pressure. Tr. belladonna with syr. digitalis was prescribed in the intervals; pills of strychnine, which were changed next day to infus. juniper and nitrate of potass. Two days afterward the patient felt muscular and cardialgic pains increased by pressure on the epigastrium. The œdema of the feet had considerably subsided; the general condition of the patient was more satisfactory, she could sleep for several hours. Infus. of valerian with quin. sulph. and ether was prescribed. At the end of the week the patient was seized with colics without constipation. She slept quietly for a couple of hours, but on waking complained of tingling and muscular pains only on the left side. The foot, whose swelling had subsided for several days, again began to swell considerably, phenomena which were accompanied with heat and cold, loss of appetite and hoarseness. Dating from the 33d to the 40th day of her illness, her condition was as follows: Tympanites, cardialgia comes and goes; the muscular pains become severe and insupportable; the cardialgia now subsides and disappears entirely; the muscular pains are next accompanied by œdema and swelling of the knee; the left hand semi-flexed; noticeable emaciation; urine small in quantity and clouded; cold succeeds heat—all these symptoms disappeared by degrees in groups, so that the restoration of the patient was protracted for another month. The remedies employed during this interval were quinine, iron, and strychnine, and arsenious acid. Her convalescence was not entire, the left foot remaining paralyzed and shortened two inches (the toes abducted). These phenomena were proofs of the participation of the spinal cord, for the patient could hardly sit down without first trying to find support for her buttocks.

The physicians who had treated her thought of submitting her later to electric treatment, but we finish our report with the question, Should they not have thought of it sooner?

Dr. William Hammond has given to the pathology and therapeutics of the organic paralysis of children his special attention. He insists on the direct application of the electric current as indispensable in cases where the muscles will not contract by the induced current. He has often found occasion to be convinced of the activity of this therapeutic agent. He has used with success the battery invented by Dr. Emile Stohrer. He says that its advantages are inestimable while it has been in use; there has been no destruction of zinc, nor loss or corrosion by acid. Its current is regular and constant; more than this, in using the battery from four to six hours at a time he did not have need to amalgamate the zincs, clean the carbons, or renew the acid. It would be too great a task for Hammond to describe all the cases that he has treated by means of the galvanic current. As soon as contractions are produced, the cure is but a matter of time, while on the contrary, if this muscular activity fails, the prognosis is always bad. In three of his cases the evil had already progressed so far that he pronounced them incurable; in fifteen other cases it was absolutely impossible to produce contractions in the paralyzed muscles, even by the strongest conducted currents, while the direct current of less power was sufficiently energetic to cause contractions.

Dr. Radcliffe observes that the chances of cure are not limited while the contractility of the muscles remains. Time only is required to accomplish a cure; and even while the muscles are completely revived they still require further electrization for the exercise of their treatment. It is to be regretted that few parents have sufficient perseverance and patience to contribute their part. With the exception of these recent cases, the cure is not an affair of days and weeks, but months and years.

The plan of our essay now leads us to the sixth section of special electro-pædiatrics:

TUMORS, SWELLINGS, AND TUMEFACTIONS.

The application of electricity to these affections is common, and has become an excellent means for two reasons:

First, because tumors, tumefactions, swellings (cellular, lymphatic, and glandular) are very common in infancy; second, because, these affections obstinately or entirely resisting the most energetic medical treatment, a means capable of resolving these organic formations should certainly find its exact indication.

We should, however, make a marked distinction between galvano-cautery *and the electric current employed for the resolution of tumors.* We will here exclusively consider this last mode.

For the description of this theory we refer our readers to the works of Scoutetten de Caplin, of Charl de Saint Marie, and Chatard Delmas. Althaus resorts to the treatment of tumors by the electrolytic efforts (not electro-thermal) of the constant current. He uses a battery of 15 to 20 elements of Daniell. The influence of electrolysis on tumors is triple, according to his opinion: first, by the mechanical effort discharged on the tumor; second, by the chemical destruction, by means of alkalies accumulating at the negative pole; third, by the alteration of nutrition produced on the vaso-motor nerves. Mr. H. Collis tried, in the same way, to cause atrophy of tumors and tumefactions by the electric current, and succeeded notably in dissipating inflammatory tumefaction around scrofulous glands. Dr. Luigi Ciniselli uses the positive pole against tumors in the axilla, the negative pole on the hand and on the course of the nerves of the forearm, and let act the continuous current of 20 or 40 elements of Remak, neither cauterization nor electrolyzation being produced. After the first seances, the fixed tumors commenced to soften and separate preparatory to being absorbed. After thirty seances, of ten tumors only five remained, and these were visibly diminished. In this way Dr. Ciniselli produced diminution or entire dissipation of tumors without electro-chemical cauterization.

As we have placed nutrition and secretion, whether normal or pathological, in the category, we place next to diseases of the secretions,

DISEASES OF EXCRETION.

The electro-pædiatric records only present us with three cases of *nocturnal incontinence* noted, and cured by Maurice Meyer by electricity. These cures relate to three orphans aged from 13 to 14. He used the following process. He placed one of the wet conductors on the sacral region and the other on the bladder, and allowed the current to pass for from five to ten minutes. In one of these boys it had lasted ten or thirteen years.

ELECTRICITY AS A FEBRIFUGE.

The virtue of electricity as a general febrifuge dates from the last century, which is proved by several cases of cure in adults. Von Holzbeck, in his work cited, furnishes all the facts since the year 1773 to 1861, p. 440. We first observe marked intermittent fever as a neurosis, whether neuralgic, neuro-spasmodic, or neuro-paralytic. And remittent is but a neurosis of the great sympathetic and vaso-motor nerves. We do not fear that we make a false impression or mistake in saying that electricity can be used as a febrifuge for adults as well as children. We again refer to the work of Von Holzbeck, which reports three cases by himself, and which we consider as so much encouragement to our colleagues to use electricity more frequently as a febrifuge.

Recamier used successfully galvano-electric cataplasms in intermittent fevers. The chief physician, Loesiewsky, of the Military Hospital at Warsaw, and the resident physician, Henrizi, published in the *Gazette Medicale de Russie*, No. 3-5, of the year 1852, a report on the treatment of intermittent fevers by electricity. Of thirty-one cases of different degrees of fever, fourteen were completely cured without any other medication; six were benefited, but retained a malarial cachexia; eleven patients continued to take quinine after the galvanic medication. The place of application was generally, for the platina pole, the last dorsal vertebræ, corresponding to the solar plexus, and, for zinc, the pit of the stomach. They also succeeded in dissipating a tumor of the spleen. During the prevalence of intermittent fever at Kiew, fifty patients were treated by electro-magnetism, of which twenty-six were perfectly cured.

THIRD PART.

SURGICAL ELECTRO-THERAPEUTICS.

Electricity has been used as an anæsthetic for the extraction of teeth. Francis, of Philadelphia, is the inventor; Rottenstien, of Frankfort, employed it; Süersen, of Berlin; Vautiers, in France; Matthews, in London; George, at Paris; and Bygrave, followed their example. Snape, of Chester, extracted 150 teeth from people of all ages and conditions. He passed a current through the tooth to be extracted. At a meeting of the College of Dentists, it was nevertheless declared that electricity had no anæsthetic property. They rather called its effects "a diversion of pain," but not capable of producing insensibility. Others declared that the operation required a particular dexterity; in that case it would be useful; later, it was applied also to lessen insensibility in operations without any decided success. Dr. Clement likewise gave also an unfavorable opinion of it.

GALVANO-CAUSTIC AND ELECTROLYSIS.

The first attempts were made by Crasell, in 1841–8; but it fell into disuse till it was taken up in 1860 by Ciniselli. But its operation in surgery was not satisfactory. It was Trippier who indicated the cases in which it might be used. He noticed at the negative pole a solvency and a scarification such as is produced by the alkaline caustics. He remarked that the scars differ according to the means employed. It is preferable therefore to all methods of cauterization permitting limitation of the effect to a circumscribed spot. The electrodes should be made of metals that will withstand the attacks of the products of electrolysis, that is to say, of gold, platinum, or copper. According to Scouteten, the subjects for application of electrolysis are soft tumors, those which contain a decomposable liquid, but it excludes all solid or hard tumors when they are not very small, and then all those which are fatty, which resist electrolysis.

It is specially Dr. Albrecht, and Theodor Middeldorph, of Breslau, who succeeded, with advantage, in bringing galvanization to the aid of surgery (caustic galvanization). He furnished, first, a complete work. The apparatus which we use are the battery, the galvanic cautery, the double stem cautery, the galvanic bougie (caudela caudens), the cutting porte-ligature, cutting handle (anse coupant, ligatura caudens), galvanic setons. Middeldorph recommends the galvanocaustic for hæmorrhages, particularly to stop them in narrow cavities, where it is difficult or impossible to use an ordinary cautery, also in intense neuralgias, especially under the form of odontalgia in children. He considered it applicable often in paralysis, since the fine instruments enable a limited and concentrated application on either nerve.

A naso-guttural fibroid, in a boy aged 11 years, was removed by the cutting handle without loss of blood, although the tumor was engorged. The cure was effected in fourteen days, and was radical.

Five small erectile tumors on the cheek of a boy two years of age were destroyed by galvano-cautery in two seances, the 5th and 22d June, 1853. In fifteen days he was cured.

Two little circular excrescences on the left tragus were removed from a child some months old by the cutting handle. He amputated with equal success a second thumb, as large as the first, by the cutting handle, which separated the soft parts from the bone, in the son of a concierge, aged six months.

Luigi Ciniselli cured a nasal polypus, complicated with tumor in the internal orbit, in the region of the lachrymal sac, "per la cauterizzazione galvano-chimica," in a child aged 22 months.

A child 12 years of age had for two years a tumor in the left parietal region, movable, of a clear red, shaped like a cock's comb, supported by a thin pedicle; the surface was moist and suppurated in certain places. It was removed by the cutting ligature, the 21st of September; scarcely any pain; slight bleeding towards the centre of the wound. On removing, by way of experiment, the little scar, the blood came freely. It was soon stopped by some touches with the point of the galvanic cautery, which proves that an operation with the bistoury would have produced hæmorrhage. The wound was healed the 30th September, and the cure completed the 5th October.

Dr. Ad. Zsigundy cauterized by four incisions the mucous membrane of the rectum of a child aged four years, for prolapsus ani; arterial hæmorrhage ensued in consequence of the agitation of the child. Cure in five weeks by the Middeldorph mode.

Prof. Schah, at Vienna, operated on an infant of two months who had carcinomatous tumor. He operated with galvano-cautery; but the child died of secondary hæmorrhage. It was his first operation.

Second carcinomatous tumor at the angle of the jaw of a child aged one and a half years. The tumor was pierced several times by an anse in the form of a beak, and well cauterized, which reduced it one-third. Dr. Werner reports, from the clinique of Prof. Bruns, of Tübingen, the following case:—A vascular tumor on the lower lip of a child was pierced several times by the galvano-caustic beak, and cured. Tarignot, having observed that ophthalmia occurs with first and second dentition, and particularly keratitis with photophobia—sometimes complicated with convulsions—places one wire of the galvanic battery near the other, and puts them upon the gum at the point where the tooth makes its appearance. In doing this, he puts the ends together to heat them to incandescence. The operation is insignificant, and preferable to lancing. He not only counteracted the irritation of the eyes, but has prevented all relapse.

After these clinical facts, we can appreciate galvano-cautery, 1st, for the reason that it avoids hæmorrhage in proportion as the platinum thread traverses the tissues, cauterizes them, and produces coagulation of the blood in the vessels. 2d. It is characterized by rapidity and energy of action. 3d. The effects of the operation can be regulated; it is also characterized by the absence of inflammatory reaction, local or general. To this time, no disastrous accident has followed the use of galvano-caustic.

4th. It admits the possibility of cutting or burning parts positively inaccessible to cutting instruments, which cannot be reached without danger. 5th. It favors healthy granulation, which advantage it shares with the hot-iron. 6th. Substituted for the actual cautery, it has the advantages of the patient not seeing a lighted furnace or the noise of the flame, which terrifies the patient.

SCOLIOSIS, DEVIATION OF THE SCAPULA.

Eulenburg, Wunderlich, Vidal, and several others have decidedly declared that the usual cause of scoliosis is seated in the muscles.

This proximate cause depends upon an unequal force and function of the muscles of the two sides. Eulenburg states that of 300 vertebral deviations 264 are due to this cause. Orthopedists are not impressed with this belief; nevertheless, several of these last use the apparatus for extension in common with galvanism, electricity, and vertebro-thoracic gymnastics. Their treatment consists only in an administration of tonics on one hand, and local application. Theoretically disavowing their opinion, they recognize in their practice an abnormal action of the muscles interested. Eulenburg reports in the *Gazette Central de Médecine* the following case: A girl, aged 9 years, small and frail, exhibited the inferior angle of the left scapula two inches higher than the right. The scapula was also turned on its axis so that the inferior angle inclined to the vertebral column, so that the superior internal angle appeared higher than the anterior. The rhomboid and levator anguli scapulæ muscles were perfectly contracted, forming swellings with the corresponding places. A pressure exercised by the hand, inferiorly and anteriorly, made the scapula descend to its normal place. There was no orgánic change of the muscles; only a shortening, produced by a total inaction of their antagonist, the left great serratus anticus muscle. Local galvanization and stimulation restored this last muscle, and effected a perfect cure. Eulenburg acquired so much experience in the subject, that it is quite worth our while to review it a little more in detail.

The deviation of the scapula, says Eulenburg, is, in many cases, an affection caused by a vertebral deviation; but it can also spring from physiological causes, following malformation or primary deviation—these can arise by disordered nutrition—a striking inequality of the two scapulæ. It may follow permanent paralysis of the arm, and especially when this has taken place in infancy. In consequence of the want of stimulation of the arm, the scapula becomes atrophied, and may become deformed by rachitis. These anomalies come less under the domain of electro-therapeutics than the irregular displacement of the scapula, which are most frequently founded on a derangement of antagonism of the muscles attached to the scapula.

This pathological state is generally called "Haut epaule" (high shoulder), "hohe Schulter"; it is often confounded with scoliosis. There are two varieties of this functional disorder of the omoplat: First, an abnormal decrease of size; Second, an increase—one caused by the different degrees of simple relaxation—to the complete destruction of the nervous motility. The other is the effect of expansive contractility, and the most frequent scoliosis is the consequence of diminished energy of one or more muscles at the same time. As soon as the levator anguli scapulæ is relaxed or paralyzed, the omoplat will take a lower position, being drawn down and forward by the inferior parts of the trapezius and by the serratus magnus anticus. As soon as the energy of the serratus magnus anticus is diminished or suspended, its antagonists shorten—that is to say, the rhomboid and levator anguli scapulæ muscles—and a turning outwards and upwards necessarily follows. When the rhomboid and levator anguli scapulæ have lost their energy, their antagonist shortens in the same way—that is to say, the serratus anticus magnus—which produces a deviation forward and downward (when there is, for example, a paralysis of the nerve of Willis, which influences it by innervation). The opposite or opposed deviation of the scapula takes place as soon as the muscles, which we have supposed to be weakened, contract. In such a case, the antagonist which is acting may counteract that which is pathologically contracted sufficiently to prevent deviation. We will refer to a couple of early cases by Eulenburg: A boy, aged 13, of great size for his age, but with flaccid muscles, exhibited the part of the spinal column, between the third to the tenth dorsal vertebræ, curved to the right side. A plumb-line lowered vertically from the top of the convexity, reached to the seventh dorsal vertebræ, the length of the longitudinal line indicated only five degrees of deviation;

this deformity was consequently inconsiderable, inasmuch as it was possible to passably restore it; but it was at the same time complicated with deviation of the left scapula. This last was so turned on its longitudinal axis that the inferior edge descended lower, and the inferior border inclined further posteriorly. The levator anguli scapulæ and the rhomboid muscles were shortened, thickened, and increased in size. By a pressure brought to bear from above and behind, anteriorly and inferiorly, he easily succeeded in lengthening the muscles which we have designated shortened. By this manœuvre he restored the scapula to its natural position. He attained the same end by an energetic galvanization of the serratus anticus magnus muscle. As soon as the treatment was remitted, the scapula returned to its false position. In raising the two arms to extend them, the dentations of the left serratus magnus were much less marked than those of the right. The quick elevation of the left arm had become more difficult, as the necessary action of the left serratus to move the scapula downwards and forwards was very weak. The patient, however, accomplished the elevation of the arm, using energetically the pectoral muscles and the deltoid. The deviation existed for four years without the cause being known. The patient was submitted to localized electrization and to active movements of Swedish gymnastics, by which means he was radically cured.

Deviation of the left scapula by paralysis of the left latissimus dorsi muscle. A girl, aged 9 years, of good constitution, handsome, presented a striking deformity of the left scapula. All the infraspinal part was so separated from its thoracic part, that several fingers could easily be introduced into the space left between the thorax and the scapula, a space which formed, so to speak, a sort of pouch. This deviation produced, by the dropping of the humerus, a frightful disfiguration. The deviation had only existed some weeks, and was suddenly manifested when the child, during her gymnastic exercises, lifted her body by one arm. All the muscles moving the scapula and the arm performed their normal functions, but the patient could not execute any movement behind and downwards with the humerus, an act difficult for the latissimus dorsi. In the direction of the left scapula there was no displacement. The right scapula and the spine continued their normal positions. Eulenburg Faradized the latissimus dorsi. To this end, to reach the point of entrance of the subscapula nerve (thoráco-dorsalis nerve), he put an electrode on the belly of the latissimus dorsi, the other on the middle of the same muscle. The scapula returned to its normal place and remained there. Partly to strengthen the muscle in question and partly to follow up the cure, Eulenburg made the child execute movements of the arm with the latissimus dorsi, gradually increasing in violence, twenty months. She had a fall from stilts, which brought on a relapse, from which she was entirely cured.

F. Seiler reports a couple of cures of scoliosis in young persons at the ages of 13 and 14, who exhibited some symptoms of the lungs. Dr. R. Phillipeaux succeeded likewise in curing some cases of deformity succeeding contractions of the rhomboid and levator anguli scapulæ muscles. There were deformities of the humerus cured by Faradaic imitation of the antagonist, that is to say, of the serratus magnus muscle, by means of the most rapid discharges possible. He reports specially two cases of deformities of the humerus, succeeding contraction of the rhomboideus and levator anguli scapulæ muscles, treated successfully by Faradization, in the *Bulletin Thérap.*, l. ii. p. 296, Avriel, 1857. A girl, aged 12 years, from contraction of the rhomboid muscles, had the right shoulder and scapula higher than the other. This displacement had existed for a year and a half; the inferior angle of the scapula was three centimetres higher than the left; it leaned towards the vertebral column, so that the spinal border of the scapula had an oblique direction—from above, below, externally, internally—exhibiting at the side a swelling formed by the shortened rhomboid muscle; the deformity disappeared when the arm was extended. The girl was cured by fifteen seances of discharges of the Faradaic current. (2d.) A girl of 9 years, who had suffered for nine months with a painful contraction of the levator anguli scapula muscle, showed the inferior angle of the right scapulæ five centimetres higher than the left. The scapula was placed as in the preceding case. There was at the same time swelling of the neck in consequence of the shortening of the levatores anguli. The deformity disappeared when the arm was extended in front. After four Faradizations, by which the serratus magnus muscle was imitated, the inferior angle of the scapulæ descended one centimetre, and after six other seances it had assumed its natural place. By way of precaution, the Faradization was continued for a month.

Prolapsus ani. Seiler treated two children successfully, who were suffering from prolapsus ani, by ten seances of electrical induction; one aged 9 years, and had suffered two years from procidentia.

Special reliefs of surgical electro-therapeutics.

In the treatment of deformities by means of tenotomy, electricity is a means very important, and very powerful.

In the abnormal positions in the articulation of the foot, it is found that restoration is more speedy by electricity than by the simple exercise of the parts.

ELECTRICITY AS A REMEDY IN PHRENIATRICS.

ELECTRICITY finds its indication against the *Phrenopathics* of childhood. Benedict, p. 2, reports a boy, aged 9 years, who had been attacked with convulsions at the age of 6 months. He had survived them, but remained an idiot. The same boy had only learned to speak at his seventh year. His memory was so feeble that he could not find his house when he had left it. He was always making faces. His condition was notably improved by electrical treatment. With idiots, the seventh nerve wants tone, from which comes a lack of expression of the muscles and a stupidity of the face. With some of them, this condition of the muscles of the face is properly paralytic, and often accompanied with an alteration of sensibility. In such cases, electricity offers some advantages.

Chloroformism—narcotism from chloroform—which in some cases suspends the cerebro-spinal functions, may reach the point of apparent death from chloroformic asphyxia. Friedberg wishing to extirpate a cyst from the eyelid of a boy, aged 4 years, by mistake the boy was hyperchloroformized and fell into asphyxia. By Faradization, and simultaneous methodical compression of the abdomen, they succeeded in restoring life.

RESUME.

Electricity and galvanism have been everywhere used in the mechanical treatment of the disorders of locomotion. In orthopedic restorations, little by little its use increased, and it was employed against anomalies and diseases of locomotion. It was aided in every possible manner, and very energetically, by the great progress of neurology, neurophysics, of experimental physiology in general, and, in a word, of the exact sciences. The knowledge of diseases of the organs of sense, the functions of the senses, and of sensibility, the diseases of organic transformation, as well as the connections and relations between the biotic laws, reached a point powerful to aid and facilitate therapeutics. The application of the constant current succeeded in exciting the sensitive and cutaneous nerves. Galvano-caustic became a powerful destructive agent of the external skin of the mucous membrane, of the coating of cavities. Its thermal effects were made useful.

It was proved that the constant current was sufficiently powerful to produce action which had been diminished and suspended in the muscles, as well as to restore them to their former irritability. We are able to irritate by the intermittent current the motor nerves, the nerves of sensation. We can at present stimulate and restore the vaso-motor force of the heart; even the capillary and lymphatic peripheries. It is possible to stimulate some organs to which the great sympathetic gives innervation. To this end, we have the power to regulate the current for the accomplishment of our therapeutic aims.

After having enumerated the advantages, the power, and the virtue of electro-atrics, we shall say a few words to the practitioners who use it, and especially to the pædiatricians, whom we urge to introduce and ex-extend electro-medication in homes and hospitals for sick children.

It is much to be desired that the number of electrical establishments, public and private, be increased, as they are at Paris, St. Petersburg, Dresden, Nassau, and Munich. It should be the assiduous effort of the medical corps to render medical electricity as accessible as possible, because the facilities for its use will always make it an important and much sought after mode of treatment.

MODIFICATION OF THE OBSTETRICAL FORCEPS, WITH PRACTICAL REMARKS ON THEIR APPLICATION.

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It was not long after commencing practice before I became convinced that the rules laid down by most obstetrical writers and teachers, in relation to the application of instruments in difficult cases of labor, required important modifications. The limits to which the use of the forceps had been restricted, and the wide range given to the perforator and crochet, failed to secure for both operations "the greatest good to the greatest number." The sacrifice of life, both to mother and child, as shown by ample and trustworthy statistics, was appalling. It is gratifying, however, to see that this subject has seriously occupied the minds of leading writers and teachers of obstetrics in this country, as well as in Great Britain and on the Continent. This remark is fully sustained by the essays and discussions contained in the transactions of the various obstetrical societies now in successful operation. Barnes, in his recent work on "Obstetrical Operations," seems to be fully alive to the importance of this subject. He remarks: "Nothing has astonished me more than to find that the old English straight forceps, variously modified indeed, but never emancipated from the narrow condition which cripple the use of the greatest of all conservative instruments, is still advocated by men of position, to the exclusion of the long double-curved. The inexorable consequences of the neglect of the double-curved forceps is the frequent destruction of the child and protracted suffering of the mother. But this prejudice in favor of an instrument, feeble and, therefore, limited in its application—a prejudice fatal to life and fatal to all scientific progress—is, I know, giving way. We shall not be long justly open to the reproach which our continental brethren hurl against us, and which is thus expressed by Lovati, one of the chiefs of the Italian school: "In England, they do not hesitate to kill the child, not only in order to save the mother from the dangers of the Cæsarian section, but even to spare her the suffering of the simple application of the forceps."

Bearing upon this subject, some interesting observations are made by Dr. Thomas Edward Beatty, in his "Contributions to Medicine and Midwifery." In an address delivered at the Dublin Obstetrical Society, in November, 1862, he made the following remarks: "Another source of rejoicing is the present state of public opinion and practice respecting the midwifery forceps. When I compare the existing practice with what it was fifty years ago in this country, it is to me particularly a subject of congratulation and pride. At the time I allude to, for some time before it and for many years after, including a period of full forty years, this instrument was banished from practice through the whole of this country. The feeling was so strong against its employment, and the leaders of the outcry were so powerful, that no one dared question the authority by which it was condemned. The perforator and the crochet were the only means in use; craniotomy was the only operation. This indiscriminate adoption of the mutilating instruments was the wonder of strangers, and was the opprobrium of the Dublin school. The submission to the authority alluded to was so complete that I am almost perfectly certain in saying no one dared to question it. But there was one faithful priest who had kept the sacred fire burning, in spite of all attempts at its extinction, and, towards the close of a most laborious professional life, had courage to proclaim the merits of the forceps, and the success which had attended their use in his hands. This was done at a time when even to mention the name of the instrument was considered a heresy, and nothing short of excommunication could be expected by him who was rash enough to recommend its use. That individual was the late Dr. Beatty, my father. His paper was read (Oct. 5, 1829) at the Association of the College of Physicians, and published in the first volume of the new series of their Transactions. That first opened the eyes of Irish practitioners, who had for so long groped along in the darkness of error; but it was not to be expected that any very rapid change would take place. To convert an entire nation, long schooled in a particular doctrine, is a work of time; but the good seed was sown. One hundred and five cases in one man's private practice were proclaimed to the world, and the reformation was begun."

In the paper alluded to by his son, Dr. John Beatty remarks: "In every case of midwifery the chief object to be attained by the practitioner should be the preservation of the lives of both mother and child entrusted to his care. The great majority of cases require no extraordinary assistance, and the duty of the accoucheur consists principally in watching the progress of the efforts which nature makes, and guarding against any unfavorable accident or deviation from the ordinary course. Unfortunately, however, some few cases do occur in which, from peculiar circumstances, instrumental aid is required; and, while we may lament the necessity for such interference, it is our duty diligently to enquire into the merits of the means proposed to assist delivery, and to select those that we find most likely to effect the purpose already mentioned—that of preserving our patient and her offspring." These judicious remarks, covering those fundamental principles which should guide every student in the study of the great question of instrumental delivery, are equally true now as the day they were penned; and though John Beatty, and, still later, his son, continued the use of the single-curved forceps, yet from the day they were announced a "slow and sure" advance has been made in the modification, improvement, and the efficient use of this instrument. But although conservative midwifery has made great and important conquests from the domain of sacrificial midwifery since the revival—if I may use that word—of the use of the forceps, yet I am satisfied something more can be accomplished—that the triumphs of this noble instrument may be increased, and the number of victims who annually fall a sacrifice to the perils of child-bed be greatly reduced.

Very early in practice, long before the introduction of anæsthetics, two cases of puerperal convulsions, one during labor, and the other just as the delivery of the child had been completed, convinced me that there were defects in the construction of the forceps then in use, and the rules usually recommended for the position of the female during labor, and, particularly, during the application of and delivery with the forceps. In the first case—a primipara and protracted labor—the convulsions, without any premonition, occurred just as the head was engaged in the excavation and before pressing upon the perinæum. I felt satisfied that the speedy application of the forceps would enable me to terminate the labor at once, and thus remove one of the causes of this dangerous complication. The patient had to be removed to the edge of the bed, turned upon her back, the head and shoulders rearranged upon pillows, and her feet supported upon two chairs by assistants, before the blades of the instrument could be introduced. Fortunately the convulsions did not recur, though the patient continued in a stupor until some time after she was delivered of a dead child, and with great difficulty removed to a more comfortable position in bed. Had the convulsions returned during the removal of the patient to the edge of the bed, or while the delivery with the forceps was in progress, the injuries to the woman might have been of the most grave and serious character. The second case was also a primipara.

The labor was lingering, and it became necessary to make an attempt to deliver with the forceps. The patient, in accordance with the usual custom, was placed upon the back, with the nates drawn close to the edge of the bed, and the feet and legs supported by assistants upon two chairs. There were only three persons besides myself in the room—females, all aged and more or less inefficient. The forceps were applied, and after persevering efforts for some time the delivery of a living child was effected. But before the uterus had contracted to expel the placenta, and just as the cord had been tied and severed, she was seized with a violent convulsion. One of the persons in the room fainted, and the two others were of little assistance. Unfortunately additional assistance could not be obtained in time. As soon as I could secure their attention sufficiently to render assistance in supporting my patient in her perilous position, I at once delivered the placenta, secured proper contractions of the uterus, and, with great difficulty, removed her to a more safe and comfortable position in bed.

These are some of the troubles and perils that caused me to make an attempt, if possible, to remove the objections I have alluded to. From this time, I abandoned the position on the side—still recommended in England, and by many in this country—in ordinary delivery; and must say that I have never heard a single cogent reason for adopting any other than the dorsal position, except in very rare cases, in either normal or instrumental delivery. I do not intend to convey the idea that, from the commencement of labor to its termination, I confine my patients rigidly to the dorsal position. By no means. During the first, and sometimes in the early part of the second stage, considerable liberty may be allowed the patient; and, in fact, it is desirable that she should be permitted to change her position, from time to time, in order to afford relief to the back and extremities from protracted constraint. But when the second stage—or what Tyler Smith calls the stage of propulsion—has fairly set in, I consider it best that the patient be placed upon her back. Barnes, who still adopts the position on the side, even in forceps deliveries, uses these words in relation to the position on the side under certain circumstances: "It is further extremely useful, if you have a competent assistant, to get him to support and press upon the fundus of the uterus during extraction. This helps to keep the axis of the uterus and the child in a proper relation to the axis of the pelvis." If the patient be placed upon her back during labor, this injunction will be unnecessary. He, again, remarks: "If the head be seized at the brim on account of delay from want of uterine action, time may often be saved by placing the patient on her back, and supporting the uterus against the spine by the hands of an assistant or binder. This proceeding, by adjusting the axis of the uterus to that of the brim, and getting the aid of gravitation, will greatly facilitate the entry of the head and encourage the action of the uterus." If placing the patient upon the back "will greatly facilitate the entry of the head and encourage the action of the uterus," does it not follow that it would be best, even in normal labor, to place the patient in the dorsal position?

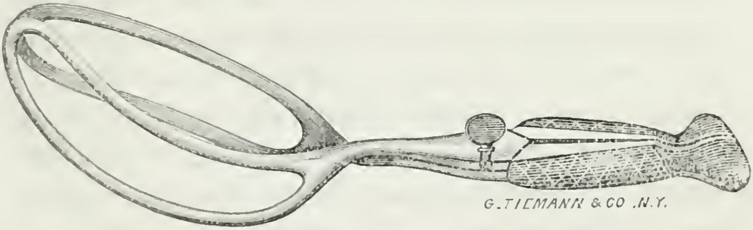
I have no doubt the trouble—often dangers—and inconveniences of removing the parturient female to the edge of the bed, with the nates and lower extremities in the uncouth and disagreeable position recommended by most writers, and the formal parade of assistants and preparatory arrangements, often deter the timid practitioner from using the forceps in many cases until it is too late to give the mother and child the advantages of this eminently life-saving instrument. Moreover, all the preparatory arrangements are frequently so appalling to the woman, worn down by a painful and protracted labor, that she becomes completely unnerved at a critical moment in which all her energy and moral courage are of the utmost importance. And most assuredly, if exhaustion, syncope, hæmorrhage, or convulsions should occur, it is best that the patient be in a position that shall not require a removal, even for the application of the forceps, which might be greatly prejudicial, if not fatal, to her.

I have alluded to the above considerations, without discussing them in detail, as reasons which induced me, many years ago, to endeavor to modify the forceps so as to secure its more efficient and safe application without removing the patient from her ordinary position in labor. This declaration, I have no doubt, will produce a smile of incredulity upon the lips of many readers; but hear me through, and try the experiment for yourself before uttering a hasty condemnation. The greater the number of indications this instrument can be made to fulfil, tending to the security of both mother and child, the more perfect will it be, and the more signal its triumphs over difficulties which sometimes appear insurmountable.

I shall now describe the instrument as modified; for the multitude of forceps that have been brought to the notice of the profession are but modifications of the original patent, which was derived from the Chamberlanes, in accordance with a more correct knowledge of the anatomy of the parturient canal and the mechanism of labor. I must candidly confess I have never used the single-curved short forceps, so extensively used at one time in England and this country. My experience with the forceps commenced in 1830, and I then used the long-handle double-curved instrument made in Philadelphia, after the pattern of Baudelocque, and recommended by the late Professor W. P. Dewees. As my experience widened, I saw the defects of this instrument, and procured that contrived by Professor Hodge, and, also, a pair of Davis's, so highly recommended by the late Professor C. D. Meigs. Subsequently I obtained Huston's modification of Siebold's forceps, and that recommended by Dr. Bond, and called Bond's "sock-lock forceps." After having used all these instruments, and comparing them with other modifications recommended in Great Britain, Europe, and this country, I gave the preference to that of Professor Hodge, of Philadelphia, first described, I believe, in Huston's edition of Churchill's "System of Midwifery," and, since, in Professor Hodge's learned and elaborate work on "The Principles and Practice of Obstetrics," published by H. C. Lea, Philadelphia, Pa., 1866. I am free to confess that, if I was reduced to the necessity of being restricted to the use of only one instrument among those which I have mentioned and referred to, I should not hesitate to give the preference to the Hodge forceps, for the reasons so ably set forth by the author. Davis's forceps, so highly extolled by the late Professor C. D Meigs, stands at the head of instruments of that pattern. Yet there are indications which neither of them can fulfil. In view of this fact, and years of careful and anxious study of the subject at the bedside of the parturient woman, I have ventured, with great hesitation, and with the most sincere deference to those eminent practitioners from whom I differ, to recommend a further modification of these two favorite forceps, which, I think, has removed some objectionable points, and extended the range and usefulness of this eminently conservative and humane instrument.

In the first place, I have adopted, without alteration, the blade or clasp of the Hodge forceps, in preference to that of Davis's and others. I regard it as better adapted, in every respect, to the contour of the fœtal head and parturient canal of the mother than any that has come under my notice. As to the specific advantages, I will let Professor Hodge speak for himself. He remarks: "The cephalic portions are nearly of the same breadth throughout, being equal to that of the extremity of the French forceps. The advantages of this great breadth are the affording of a firmer hold of the head and allowing of larger fenestræ, so that the parietal protuberances may project into the openings, and no space be occupied by the blades when properly applied. The cephalic surface of the blades has a double concavity, as in Haighton's forceps, being curved, not only from one extremity to the other, but also transversely, from one edge to the opposite. This flat surface is always presented to the scalp, and there is no danger of this tissue being injured, even when great compression is made. The inner surface of the extremities which come in contact with the temple or face of the child has been flattened, as had been done in Davis's forceps. The space between the blades corresponds to the ovoid shape of the head, the cephalic curve being moderate at the extremity of blades, and gradually increasing for about two-thirds in length, and then diminishing more rapidly toward the shanks. Hence, when the handles are in contact, this space is very gradually oval; the greatest transverse diameter being about two-thirds of the length from the extremities, and measuring two and a half inches—the points of the instrument, at this time, being separated about six or eight lines. Hence, when the forceps are applied to the head, and the handles, of course, partially separated, the parietal protuberances correspond to the greatest breadth of the forceps; while the anterior portions of the blades will be in very exact conformity to the lateral portions of the head. The advantages of this arrangement are very great; for when traction is made the force is directed very equally upon the whole sides of the head, anterior to the parietal protuberances, and not on any particular points, thus increasing the stability and efficiency as well as the comparative safety of the instrument. Another advantage is that the forceps with this curve are less liable to slip; for, when compression is made, the blades will glide nearer to the mental extremity of the head, just in proportion as the biparietal diameter is diminished by lateral pressure. Thus a small head will sink deeper into the grasp of the forceps than a larger; or, if a head should, from the necessity of the case, be perforated, and thus diminished in size, the forceps, by this arrangement, will be in no danger of slipping, but, on the contrary, would receive the head more completely within its grasp as its diameters diminish."

For reasons which will be given when the advantages of the modifications proposed are particularly noticed, the blunt hooks to the handles of Hodge's forceps have been discarded, and the handles, from their extremities to the lock, reduced from 6·8 to 4·5 inches, composed partly of steel and partly of wood. The handles of the Davis forceps used by the late Professor C. D. Meigs measures four inches from their extremities to the locks. The entire length of the Davis forceps, from the extremity of the handles to the tip of the blades in a right line, is twelve inches. From the lock to the commencement of the spring in the blade of the Hodge forceps is 3·5 inches. I have reduced this to three inches in my instrument, giving the entire length, from the extremity of the handles to the tip of the blades, in right line, 13·5 inches; this distance in the Hodge instrument is 16 inches. As has been already stated, there is no difference in the clasp, or blades proper, of the Hodge forceps and the clasp, or blades proper, of my modified instrument. In the Hodge forceps, the length from the lock to the extremity of the blade, is 9·5 inches; in the Davis instrument it is 8·5 inches; and in my instrument, it is 9 inches. The combined handles and shanks in my instrument—that is, from the extremity of the handles to the spring of the clasps or blades proper—forms a right line. The lock is the same as the Hodge forceps. The pelvic curve in my instrument is greater than that of the Hodge forceps, bringing it, I think, more in accordance with the true curve of the parturient canal, and the direction which the head of the child must travel in normal parturition.


G. TIEMANN & CO. N.Y.

The forceps thus modified — well represented in the accompanying woodcuts—are made of best tempered spring-steel, and weighs fifteen ounces avoirdupois, securing sufficient strength for the exercise of all power adequate to any demand consistent with the safety of the mother and child, and a degree of lightness greatly facilitating their introduction and adjustment. It was not until 1868 that I was enabled to have the instrument constructed in accordance with the views which have been expressed, the late war having cut off access to our best instrument-makers. During the summer of that year, George Tiemann & Co., of New York, brought out the forceps to my entire satisfaction, and in their usual beautiful and workmanlike style. I have delayed bringing it before the profession generally—except in a few oral remarks before the South Carolina Medical Association two years ago—until it had been fairly tried, and its advantages recognized by competent members of the profession. So far, it has come up to what has been claimed for it, and I shall conclude this paper with some practical remarks, setting forth briefly some of the advantages combined in the modified instrument.

It will be necessary to allude again to the position of the parturient female. My custom is to place the female on the right side of the bed, near the edge; of course, the usual preparations for protecting her apparel and the bedding on that side of the bed from becoming soiled, should be made. During the early part of labor, she is allowed free liberty to turn, from time to time, on either side; but when the head descends into the excavation, and approaches the floor of the pelvis, and the pains become decidedly "bearing down," as commonly termed, she is required to place herself on the back, with the legs flexed upon the thighs, and the thighs upon the pelvis. The head and shoulders are to be properly elevated, and such assistance given, by holding her hands, as may from time to time be required. The accoucheur stands or sits facing the head of the bed, which brings his right side to the right side of the patient, his right hand free to make all necessary manipulations within the parturient canal, and his left to steady the uterus, or to be used as circumstances may demand. If the patient is placed upon a mattress of proper thickness and firmness—which, I believe, is the usual custom throughout the South—the nates will not sink into a hollow, as is the case when a feather bed or some soft material is used; and, should the forceps become necessary, they can be applied with perfect ease and safety, and delivery effected without changing the position of the patient. Even if the nates should be disposed to sink into a slight depression in the mattress, it will only be necessary to draw her up in bed a few inches, or place a small pillow under her hips. This is one of the advantages which I claim for my instrument. I make this confident statement, because it is the result of actual experience in numerous cases in my own practice and that of professional friends, all affording the most direct testimony as to the safety and success of the plan proposed.

Previous to the construction of my instrument, I was in the habit of using Davis's forceps under similar circumstances. But the blades and shanks of this instrument are objectionable. The shanks, though running parallel to each other, are not in the same vertical plane, as in the Hodge forceps and my instrument. Moreover, the head of the child does not completely fill the clasps, and, consequently, a large portion of the lower limb of the blade, which is greatly curved downwards, encroaches upon the walls of the vagina and perinæum some time before the ovoid head of the child presses upon them, thereby endangering a rupture of the perinæum and laceration of the vaginal walls. This danger is entirely obviated by the manner in which the head of the child is grasped by the Hodge blade.

Since the adoption of the instrument now recommended, I have only on one occasion found it necessary to place the patient across the bed with the nates drawn to its edge, and the feet and legs supported by assistants on chairs; and this was under peculiar circumstances and difficulties, as it was not possible, from constitutional objections, to bring the patient sufficiently under the influence of chloroform without using a quantity that would have endangered life. I delivered the same lady, in her accouchement with her second child, with my forceps, a few days since, without removing her from her position in bed. This could not be done with an instrument having longer hands and shanks, and for this reason I have discarded the long hands and those with the blunt hook. I am aware that, at this point, the objection will be made, by those who regard the forceps a mere tractor, that sufficient tractive force cannot be exerted by the operator without the long-handle forceps, or when the patient is in the position which has been advocated in the foregoing observations. I think it can be clearly shown that this objection has no real force. Whatever minor differences there may be among writers upon this subject, the majority are pretty well agreed in considering leverage as one of the most important mechanical forces secured by the forceps—a force which can be exerted more effectually in conjunction with the propelling powers of the uterus and other expulsive forces of the mother, in accordance with the true pelvic curve, than by direct traction. In speaking of the liver, in his obstetrical operations, Barnes, after some preliminary remarks, says: "It is well to begin with the simplest case. This occurs when the head, presenting in the first position, has descended into the cavity of a well-formed pelvis, and is arrested on the perinæum for want of expelling power. In such a case, very moderate leverage and tractile power—a force of a few pounds, perhaps—is all that is required. Often the lever or tractor will be quite sufficient. The moulding or diminution of the equatorial diameters will be effected by the sole compression of the mother's structures. The occiput lying behind the left foramen ovale, the tractor may be slipped over it, and the head drawn down towards the pubic arch, using your fingers as a fulcrum. This may be enough, for often, when the head is once started, expulsive action returns. If not, then the tractor may be shifted to the opposite side, so as to lie over the child's face and chin in the hollow of the sacrum. Then drawing down, you give the extension movement of the head, and the cranium soon emerges through the outlet. Several skilful practitioners who frequently resort to this instrument contend that it is a true tractor, and point in confirmation of this view to the great curve of the blade; but I think reflection will show that it is essentially a lever. It does not directly draw down the head, but, by pressing upon one side or point of the head-globe, it causes the globe to revolve upon its centre, its axis representing another lever. If the point opposite to that seized by the lever be movable, of course, when leverage is applied, the head will roll upon one side as it comes down on the other; but if the opposite point be more or less fixed, as the occiput generally is, against the foramen ovale or left ramus of the pubes, then leverage on the face and chin will effect rotation on that fixed point as a centre, and the bulk of the head will have descended." Let us now follow the same writer in his clear illustration of the same principles applied to the two levers united —the simplest form of the forceps: " A similar principle of leverage may be applied to the two blades of the short forceps; but in this case the leverage is applied to the transverse diameter of the head. The lever can, in like manner, be applied to the side of the head if necessary. When the blades are crossed and locked, the common fulcrum is the lock. Then, by gently bearing upon each handle, alternately swaying the instrument backwards and forwards, avoiding the pressure upon the pelvic walls, you cause the head-globe to rotate to a small extent alternately in opposite directions upon its own centre. At each partial rotation, a little descent is gained, owing to the point opposite to the lever in action being partially fixed by the other blade, and by gentle traction upon the handles. In very many cases this gentle double leverage is enough to effect delivery. Traction is hardly called for at all. . . . It is easy to demonstrate this simple leverage action on the phantom. Thus, if I take each blade of the forceps alternately unlocked, and use it as a lever, the head advances by a series of alternate side movements, until it is actually extracted by this power alone. Is it reasonable to throw away a power by means of which we can safely economize the more hazardous traction force? It is, however, disapproved of by some authorities who enjoin traction alone. But I believe pure traction is almost impossible; and I am equally certain that a gentle and careful leverage will enable you to deliver with a great economy of force and time, which means, of course, greater safety to the mother." The late Professor C. D. Meigs was a warm advocate of the importance of the leverage power of the forceps. In the last edition of his "Treatise on Obstetrics," he remarks: "In order to get a good idea of the leverlike action of the forceps, let the student endeavor to deliver the fœtus on the machine; and for this purpose, let him employ a Baudelocque or French forceps. Having grasped the head, let him take hold of the blunt hook of the left-hand branch, and pull by that alone; and as he pulls, very gently move the hook towards the left side, and, having carried it far enough over in that direction, let him take hold of the blunt hook of the right-hand branch, and pulling gently, or merely holding on enough to keep the clamp of that branch from sinking into the pelvis, if he carries the handle over to the right side, he will find what is meant by, and what is the great and efficacious power of, the leverlike operation of the forceps when drawn from handle to handle; for, as he carries the hook to the right, the blade of the other half of the forceps will be seen to emerge a little from the pelvis; and so, by alternating the leverlike motions, he will at last find that the forceps is withdrawn wholly from the pelvis, bringing away in its clamp the head of the young child unhurt by compression."

I have found that this modified instrument can be applied, while the mother is in the position indicated, in all cases where the vertex has descended below the superior strait, with the parietal protuberances fairly engaged at the brim of the pelvis. When the blades are carried up and placed upon the child's head, if properly adjusted, the blades will lock just without the vulva, the shanks merely touching the posterior commissure of the vulva, and the handles not impinging upon the bed when properly arranged. If, now, the handles be grasped—not tied—so as to fix the blades firmly upon the head of the child, and sufficient leverage motion is slowly and deliberately made alternately from right to left, coincident with the return of uterine action, you will find that the head will gradually advance, and in its progress follow the course of the pelvic curve; unless opposed by direct traction downward by the operator, the handles will rise in the direction of the pubes, and the labor be safely completed by the combined powers of the mother and the leverage action of the forceps. I would suggest that probably the true nature of this leverage action has not been fully appreciated. When the forceps are locked upon the child's head, in order to secure the scalp and other parts from injury, it is necessary that the head should be firmly held in the grasp of the blades to prevent slipping and alternate sliding when the leverage motion is commenced. Consequently, under these circumstances, the forceps no longer represents two levers with a common fulcrum at the lock to be used alternately, but simply the two blades fixed and combined as one lever. If the fœtal head be arrested in its advance, it will probably pinch at some particular point, or it may be fixed, more or less, around the entire circumference. If the uterine action has become enfeebled, the mere introduction of the forceps and the first lateral leverage motion will often arouse the flagging powers, and be sufficient to complete the delivery. But when the fixation of the head is firmer, and the flagging energies of the uterus are not aroused, and the leverage motion is commenced, we will say, from right to left, the entire head will not be moved, but only that end of the cephalic pole which corresponds with the clasp of the right-hand blade, the other extremity of the pole remaining stationary. When the combined instrument is then carried from left to right, the previously stationary extremity of the cephalic pole will advance; while the other, from the force of friction, assisted by a certain degree of traction which can be exercised, and the expelling powers of the mother, will be prevented from receding. In this process, with due care, avoiding undue haste, there can be no danger to the soft parts of the mother, as the shanks, unlike most other instruments, lie immediately over each other, and the bows are completely filled by the fœtal head. When the shanks spring directly from the locks and form a portion of the curve of the bows or clasps, there is always more or less danger of rupturing the soft parts of the mother. It was for this reason that I retained unaltered the blades of the Hodge forceps, simply reducing the length of the handles and shanks. When the forceps are applied to the head when high up in the pelvis, I have been in the habit of combining traction with leverage in a manner which I find approved of by Hodge. The object is attained without direct traction from above downward and backward. He remarks, at page 255 of his "Principles and Practice of Obstetrics": "During the descent of the pelvis, it may often be advantageous, while the practitioner is using the forceps, as tractors and levers, to place the fingers of the left hand in front on the shanks or joint of the forceps, so as to make a direct pressure downward, and thus determine the blades more directly in the axis of the pelvis. By this manœuvre the head will be directed firmly against the coccyx and perinæum, and not drawn against the pubes." This procedure can be effected easily and efficiently with my instrument without removing the patient or bringing the nates to the edge of the bed, as usually recommended where traction is required in the direction of the axis of the superior strait.

The further advantages of being able to use the forceps without removing the patient from the position usually occupied in normal labor must be evident when we consider the dangers arising from syncope, extreme exhaustion, hæmorrhage, and convulsions, in all of which accidents and complications it is of the utmost importance that no time should be lost; and, above all, that the patient should be left quiet, and, as far as possible, undisturbed by a removal, which in many cases would inevitably result fatally. In cases, also, in which anæsthetics are used, it will sometimes be found very difficult, by mere force, to remove the patient while under their influence to the desired position and back again to her proper place in bed. Other advantages might be enumerated, but I must refrain from trespassing longer upon time and space; for, when the plan proposed is once tried, I am sure they will readily recur to the mind of the observing practitioner.

There are some circumstances, however, which preclude the possibility of applying the forceps while the female is in the position which I have recommended for their ordinary use. In the delivery of the after-coming head, in pelvic presentations, a removal of the patient, with the nates well over the edge of the bed, is essential to a proper and safe application of the forceps. In cases, also, in which the fœtal head, from deformity at the superior strait or other causes, is floating and free above the brim of the pelvis, the forceps and position recommended in this article cannot be used. In such cases the long-handle instrument of Hodge and others will be necessary, and the patient must be brought with the nates over the edge of the bed, in order to a proper and safe manipulation under difficulties of so great a magnitude.

I would be glad to say something in relation to the early use of the forceps, and the perfect safety of a proper instrument judiciously used, but I must draw these remarks to a close. As a knowledge of the true anatomy of the parturient canal and the process of labor is extended, and the forceps strictly adapted to the great object in view—the safety of the mother and child—the more signal will be the triumphs of this heavenly boon to the puerperal woman. My experience, covering a period of forty-three years, fully coincides with the following remarks of Dr. Robert Barnes, of London: "In the possibility of attendant danger, craniotomy differs essentially from the forceps. Whilst under craniotomy mischief or death may ensue, the forceps, if used rightly and in suitable cases, is an innocuous instrument. Statistics professing to show that the mortality from the use of the forceps is at the rate of one to twenty are flagrant examples of the fallacy of arguing *post hoc, ergo propter hoc.* Properly speaking, the mortality from the forceps is *nil.* Women die because the instrument is used too late."

NOTE.—Messrs. Geo. Tiemann have the original model of the forceps, and have promised to construct them of the pattern, quality, and temper of the original.

THE TREATMENT OF CANCER OF THE UTERUS WITH THE SHARP-EDGED SCOOP, OR CURETTE.

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THE local treatment of malignant affections of the uterus has hitherto been generally confined to the complete removal of the diseased vaginal portion with the knife, scissors, écraseur, or by galvanic cautery, as long as the supra-vaginal portion of the uterus and the surrounding parts had not become implicated, and to the application of caustics and astringents to the ulcerated and bleeding surfaces after the affection had attained to such a degree and extent as to preclude all operative measures. The removal of the entire uterus as a cure for cancer, which has been performed nineteen times, with two successful cases, those of Recamier and Langenbeck the elder (Breslau's "Compilation,"1852), has met with so little approval from the profession, and appears to offer so small a chance of success for the ultimate cure of the disease, even if the patient survive the operation, that I have not thought it necessary to take it into account in making the above statement.*

We all know the very imperfect and evanescent results obtained by the application of mineral caustics and the actual cautery to the ulcerated surface of a cancer of the womb in an advanced stage; we have all seen the discharge arrested or diminished, and the strength of the patient apparently increased, during a few days, or at most weeks, when a second and third application of the cautery would become necessary, the diseased surface continually increasing in dimension, the discharge growing more profuse and fœtid, and the patient less able to bear the drain with each succeeding cauterization, until finally the disease has spread to such an extent, and is in such proximity to the peritonæum, and the patient so debilitated, that all more powerful local agents must be avoided, and the physician can do nothing but attempt to make the death of the sufferer as easy and painless as possible.

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* An additional case has since come to my notice, of excision of the whole uterus performed successfully for cancer, by Dr. Kieter, of Kazan (*Med. Zeit. Russlands,* Juli, 1848).

This is the usual, I may almost say only, course and termination of malignant uterine disease, varying somewhat in detail and length of time, but generally reaching its fatal conclusion within two or three years of its original discovery.

The cases of circumscribed and recognizable carcinoma uteri which come under the notice of the physician at such an early stage as to allow of their complete removal are acknowledged to be comparatively rare, and in most instances of amputation of the cervix for cancer a return of the disease is to be anticipated sooner or later. It is only in recent and defined cancroid (epithelioma) where an early diagnosis is often more easy, and where the lymphatic vessels leading to the body of the uterus and fornix vaginæ have not yet become involved, that a radical operation is likely to be followed by a permanent cure.

The undoubted but extremely rare cases of spontaneous destruction and discharge of the cancerous portion of the womb, with subsequent cicatrization of the surface and final complete recovery (reported by Scanzoni, Rokitansky, Kiwisch, Virchow, Barker, Mettauer, and Habit), are accidental and unforeseen occurrences which it would be difficult, and certainly rather reckless, to attempt to produce intentionally. I shall have occasion to mention this subject again further on.

We thus see, what is affirmed by all authors and the profession in general, how little is to be expected from operative treatment of cancer of the womb, and that, inasmuch as a thousandfold experience has sufficiently demonstrated the inefficacy of the various pharmaceutical remedies advocated from time to time, there hardly remains anything else for the physician to do in the treatment of this terrible disease than to try to support life by combating the most distressing and dangerous symptoms occurring in its course, and to endeavor to alleviate the last moments of the patient. (Scanzoni, "Diseases of Women," 1867, vol. i. p. 340.)

Prof. Gaillard Thomas, of New York, in the last edition of his most admirable work ("Diseases of Women," 1872, p. 533), says: "When amputation is impracticable, or rather inadvisable, from advance of the malignant deposit into the parenchyma, out of reach of the surgeon's instrument, the only remaining radical resource is to destroy the existing disease by violent caustics. This means has been resorted to since the earliest times, but the results have been so unsatisfactory that few employ them with any frequency now." After enumerating the various caustic agents, Thomas proceeds (p. 535): "I have employed every one of these means in carcinoma, but thus far, I regret to say, that in no case have I seen anything approximating improvement from their use, while I have more than once been forced to deplore my having had recourse to them."

In no work on gynæcology do we find any mention made of the mode of treatment and the instrument which form the subject of this paper, and which, rationally and scientifically employed, bid fair to fill a very considerable vacancy now existing in the therapeutics of carcinoma. The only allusion to a similar proceeding is made by Thomas (*loc. cit.*, p. 556), who says that a curette may be passed into the uterus, and a portion of an intrauterine cancerous growth sufficient for microscopical examination be removed. He also (p. 558) reports a case in which, after dilating the cervix, he scraped out the fungoid masses studding the walls of the uterine cavity with the curette, without, however, suspecting their malignancy.

This curette was invented by Recamier a number of years ago, and used by him for the purpose of removing simple excrescences and granulations from the cervical canal. Sedillot employed sharp spoons for scraping out carious bones, and is reported to have practised the same procedure in vaginal and uterine cancer.* I myself frequently saw Billroth, in Vienna, scrape out ulcerating lymphatic glands with excellent results. During the late Surgical Congress in Berlin, in April,

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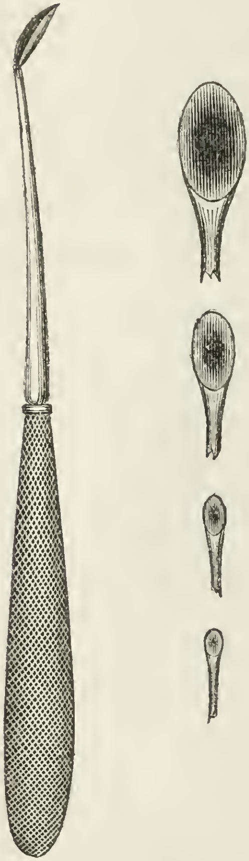
* Prof. G. Simon, in Heidelberg, "The Scraping Out of Soft Sarcomatous and Carcinomatous Tumors with broad bases, situated in cavities of the body,' 1870, an article which I have used as a foundation to this paper, it being the only one so far published on the subject.

1872, I heard Prof. Volkmann, of Halle, mention that he was in the habit of scraping out all cases of carcinoma within reach, wherever the disease might be, such as in the mamma, pharynx, rectum, etc., if so far advanced as to prohibit the removal with the knife, and that he had seen very good effects from the manipulation, which he likewise extended to lupus and to scrofulous, varicose, and other atonic ulcers.

During the past summer, I mentioned this procedure at a meeting of the London Obstetrical Society, and demonstrated the scoop used by Prof. Simon, of Heidelberg. Dr. Braxton Hicks and Dr. Barnes expressed their approbation of the operation, and the former remarked that the application of the curette was not entirely new in malignant affections of the uterus, without, however, specifying his assertion. The instrument shown by me was taken as a model in London, and the several sizes were made for Dr. Alfred Wiltshire, Physician to St. Mary's and the West London Hospitals, etc., and for Dr. Alfred Meadows, Physician to the Women's Hospital, etc. A few weeks later, I showed the same instrument, and explained its use, to Prof. Alexander Simpson, in Edinburgh, who informed me that he had been in the habit of employing a contrivance in the shape of a bent spatula, with sharp edges, for the purpose of paring off excrescences in malignant vaginal disease, and immediately ordered a set of the scoops, as described by Prof. Simon, to be made. While in England, I was casually informed that Sir James Simpson occasionally used his finger-nails to tear away portions of proliferent malignant growths of the portio vaginalis, such as cancroid or vegetating epithelioma in its early stage, in order to remove the source of the debilitating discharge and hæmorrhage—a manipulation which acted on the same principle as the scoop now in use, but in a much less perfect manner.



As far as I am aware, Prof. Simon, of Heidelberg, is the first, and thus far the only, surgeon who has used the scoop for the removal of cancerous disease of the genital organs in a systematic and scientific manner, and it is for the purpose of more particularly calling the attention of the profession in this country to this mode of treatment that this article has been prepared.

While studying under Prof. Simon, at Heidelberg, last spring, I had occasion to observe the operation, and have since practised it myself in three instances, once at Heidelberg, and twice in London.

The instruments used are oval spoons or scoops of steel, with moderately sharp edges and slender stems, with a slight sigmoid curve, fixed in wooden handles, the whole being of sufficient length to enable them, if necessary, to be passed into the cavity of the uterus. The scoop is attached to the steel stem at an obtuse angle, which can be varied in different instruments and according to the particular case. Prof. Simon employs five different sizes, the preceding drawings of which are taken from his above-mentioned essay. The capacity of the spoons varies from a small almond to that of a lentil, the thickness of the steel stems being in accordance, as seen in the accompanying woodcuts.

The advantage of these scoops lies in the circumstance that with them we can remove the diseased portions easily, effectually, and without danger, in numerous cases where the extent of the morbid surfaces, the depth to which the disease has spread into the uterus and the vaginal walls, and the proximity to the peritonæum, bladder, and rectum would prevent the application of active caustics. In such cases we have been compelled hitherto to allow the disease to run on unchecked, and so confine ourselves simply to alleviating the fœtor and the pain as much as possible. With the scoops, however, using the larger ones as cutting instruments to remove more considerable portions of soft cancerous tissue, and so scrape over more extensive level surfaces, and the smaller sizes to scoop out the various cavities and crevices in the diseased parts, we can easily detach and destroy all papillary excrescences and cancerous granulations, and thereby, having removed the immediate source of the pernicious hæmorrhage and discharge, leave a comparatively healthy and not secreting surface. That the general health and strength of the patient will improve after this manipulation is evident and a matter of experience. The patient is put into condition to restore her strength and enable her to sustain the subsequent inevitable drain on her system and the unavoidable repetition of the operation; for, unfortunately, a *cure* of the carcinoma is out of the question at such a stage by this or any other application.

Spiegelberg ("The Diagnosis of the First Stage of Carcinoma Colli Uteri, *Archiv für Gynækologie*, vol. iii., part ii., 1872), after asserting that, in the majority of cases of cancer of the neck of the womb which come under treatment, amputation is inadvisable on account of the certain return of the disease and the great hæmorrhage attending the operation, remarks that, in order to be of any use, even temporarily, the diseased portions must be removed thoroughly by the knife or scissors, inasmuch as wire loops and écraseurs cannot be applied so high up, and consequently should be obliged to work in morbid tissue without any prospect of success; owing to the proximity of the bladder and the serous lining of the abdominal cavity, it is never advisable to attempt the funnel-shaped extirpation towards the cavity of the uterus with knife or scissors in the dark, and we are therefore compelled to forego all operative interference. His advice is "either a very early operation or, where no longer possible, purely symptomatic treatment."

Spiegelberg certainly was not aware of, or at least did not attach that degree of importance to the use of the scoop which it really deserves, or else he would not have omitted mentioning the only and very instrument which fills the deficiency, and enables us to remove a great part of the diseased tissue, and do something towards retarding the progress of carcinoma uteri, even at a most advanced stage.

Simon (*loc. cit.*) says: "The use of sharp-edged spoons is very important for the extirpation of soft sarcomata and carcinomata with broad bases situated in cavities of the body, for by no other means, neither by cutting instruments nor by the actual cautery and caustics, can the tumors in question be as thoroughly and safely removed, the budding proliferation kept within bounds, and the neighboring parts be so little endangered. We can never control the action of cutting instruments, the red-hot iron, or caustics with such certainty, and consequently are unable to remove morbid growths which have penetrated into the tissues and approached important organs, with these methods, nearly as thoroughly as we can with the scoops."

Further advantages attending their use are the inconsiderable loss of blood during the operation, the absence of secondary hæmorrhage (owing to the scraping and tearing action of the instruments), and of any considerable reaction.

We are not restricted to those instances of cancer of the cervix uteri where an extensive destruction has already taken place, and our object is only to remove the scattered fungoid granulations and irregularities of the large ulcerating surface; but we can also employ the scoops in detaching those pendulant papillary growths—"cauliflower" excrescences in cancroid—which, by the constant discharge and the frequent hæmorrhage proceeding from them, debilitate and weaken the patient, even before the general constitution has become affected by the cancerous cachexia. One might suppose that the hæmorrhage would be enormous during such an operation; but, if we rapidly detach the vascular loops, the hæmorrhage will be but momentary, and, its source having been removed, will not return.* As a rule, in such cases of cancroid, we should resort to amputation of the whole vaginal portion, but we not unfrequently meet with instances where the disease has already involved the supravaginal part of the uterus, and still retains the peculiar character of vegetating epithelioma (as I myself have seen), and it is in such cases that the scoop is of eminent service.

The source of the hæmorrhage can be removed by it much more effectually and thoroughly than by caustics, the patient regains her strength, and, instead of succumbing to the drain almost while the disease is still local, is enabled, by means of favorable external circumstances, and occasional repetitions of the process, to support life under tolerable conditions for a number of years.

In cancer of the body of the uterus, especially in those cases known as cancroid, medullary sarcoma, or fungus of the uterine cavity, the smaller scoops may be used, after dilatation of the cervical canal, if necessary to scrape out the soft malignant mass; they can be passed into the uterus, and by gentle traction or rotary movements the fungus may be detached and extracted. Simon (*loc. cit.*) mentions having scraped away from the walls of the uterine cavity the remains of a fibrinous polypus, which was the cause of repeated floodings, after the cervix had been dilated by the bilateral incision, and the uterus drawn down so far with Muzeux's forceps as to allow of the forefinger being passed into the uterus to control the action of the scoop.

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* The scoop thus actually controls hæmorrhage, and acts as an efficient hæmostatic.

Strong caustic agents, it is true, have the same result as the scoop, but in a much less perfect degree, their benefit is much more evanescent, the disease returning much sooner and with greater violence, and their application is attended, especially in the later stages, by more inconvenience and danger. With the more active caustics, such as potassa fusa, the acid nitrate of mercury, and chromic acid, if they be so thoroughly applied as really to destroy the malignant growth, the occurrence of metritis and pelvic cellulitis or peritonitis is by no means impossible. Prof. Thomas (*loc. cit.*, p. 552) says that the application of the first-named escharotic should always be regarded and treated as an operation, and the patient should distinctly understand that it is no trivial affair, to be lightly dealt with.

No such degree of danger attends the scooping process, which is occasionally followed by some reaction, but only exceptionally, and then unavoidably, because unforeseen and unexpected, just as peritonitis and parametritis have been known to follow the introduction of a sponge-tent or the simple bilateral incision of the cervix. One of Simon's cases had an attack of local peritonitis, and the same result occurred in one of those I operated on in London, but both patients recovered in a short time.

The *modus operandi* (partly as described by Simon) is as follows: The object is to scoop the morbid portions out of the normal tissue, by means of sharp spoon-shaped instruments, which superficially, and in cases of large prominent tumors, are to be used as cutting-tools; the deeper, larger, less prominent tumors and ulcers are to be merely scraped out. With the large scoops we remove the bulk of the growth, and with the smaller sizes we penetrate into the various cavities and recesses. The diseased tissues can be easily distinguished from the normal parts, for the former are soft and friable, and the latter firm, tense, and unyielding, the creaking sensation of resistance imparted to the touch when the scoop reaches the normal tissues shows us that our object is accomplished in that quarter.

If we can gain a view of the field of operation by the introduction of specula and vaginal depressors, so much the better; but it is by no means necessary; an experienced finger is a sufficient guide for the instrument, and, preceding as it should do the course of the scoop, will enable us to remove all that is necessary or advisable.

We occasionally find that the cancer has undermined the mucous membrane of the portio vaginalis, and that the latter, after the removal of the cancerous deposits, remains as a jagged mass hanging into the laquear vaginæ; it is best to remove these shreds with the knife or scissors for the purpose of obtaining a better view of the diseased surface, and making more sure of the destruction of the malignant substance.

After as much has been removed as is thought desirable, an injection with cold water may be made and, if the neighborhood of the adjacent important parts allow, a fluid caustic of greater or less strength be applied, such as chromic, carbolic, or pyroligneous acid, which will now act with more efficacy than when the fungoid granulations were still present.* For safety's sake, and if the patient be not within close reach, a tampon, saturated with one of the above-named solutions, or any astringent or disinfectant, may be loosely shoved into the vagina; in hospital practice, where medical aid is constantly at hand, this proceeding is scarcely necessary.

The pain attending the scraping of a *uterine* cancer is so slight that, unless the patient absolutely wish it, the administration of chloroform may be dispensed with. The hæmorrhage generally only occurs at the very commencement of the operation, and is always moderate, so that no special precautions or contrivances are required. The patient may lie on her back or side, as is more convenient to her or the physician; the side to be chosen might vary accordingly as the chief site of the disease is more accessible from the right or left, and has already been determined by the preliminary examination. In subjecting a patient to the operation for the first time, it is advisable to proceed with particular caution, and rather leave a more thorough extirpation for a second sitting, when you will have become acquainted with the peculiarities of the case, and will know whether the patient is liable to a strong reaction or not. The after-treatment is very simple, and consists in bodily and mental rest for two or three days, after which period a moderate amount of exercise may be taken, and is even beneficial.

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* I ought to mention that this is a proposal of my own, and not adopted by Professor Simon, who, to my knowledge, uses only the cold-water injection. Kiwisch says that the good effects of caustics are heightened by the previous removal of the proliferations by the fingers, knife, or scissors.

There will usually be a considerable discharge of watery, sanious fluid, often mixed with pus, for several days after the operation, which will gradually diminish and cease under astringent injections; a few weeks later the finger will find a smooth, soft surface, covered with healthy granulations, or already in process of cicatrization; in place of irregular fungoid excrescences, the discharge will be either entirely absent or very slight, and the patient, under the administration of tonics, a generous diet, and perhaps in a bracing country air, will have regained a good portion of her strength, color, and spirits, which gain will enable her to meet the unfortunately inevitable repetition of the operation within several months with much better chances for the relative prolongation of her life, than after any amount of cautery or symptomatic treatment.

Up to 1870 Prof. Simon (*loc. cit.*) reports having treated four cases of carcinoma, three of the portio vaginalis and cervicalis uteri, and one of the posterior cul-de-sac of the vagina, by means of the scoop, and was so well satisfied with the results obtained that, as he lately informed me himself, he has since employed the same manipulation in every available case, both in hospital and private practice, in preference to and with the exclusion of the usual caustics. In addition to these cases, the number of which is sixteen, I have three cases of my own, and can therefore speak of twenty-three instances of the scraping process.

Case I.—The patient was forty years of age, and was suffering from an epithelial cancer of the vagina, which had completely filled the posterior cul-de-sac, and extended down to the middle of the canal. Simon had tried, in January, 1869, to remove the tumor as much as possible with knife and scissors, and the actual cautery, but owing to the danger of injuring the rectum and Douglas fossa he was obliged to leave behind a large portion of the broad basis of the tumor. After the extirpation he cauterized the wound once a week with the sesquichloride of iron and nitrate of silver, but very soon the excrescences began to shoot out again, hæmorrhage and a putrid discharge set in, and the patient was particularly annoyed by a harassing, gnawing pain in the rectum and coccyx. In June of the same year the above operation had to be repeated, but a fortnight later the disease was again found to be progressing, notwithstanding the application of the sesquichloride of iron and the nitrate of silver. In September the scoop was resorted to, and the cancerous deposits were removed from the laquear vaginæ and the recto-vaginal septum with much greater accuracy than was possible with the knife. A very deep cavity extending to the mucous membrane of the rectum was thus formed. There was much less hæmorrhage than during the former operations, the reaction was almost imperceptible, and the patient was enabled, after keeping her bed the first day, to bear the half-hour's ride by rail to her house on the third day. On inspection a month later a few suspicious-looking spots in the laquear were scraped out. The patient was feeling much better, the hæmorrhage had ceased, and the purulent discharge and pain in the rectum had become very slight. Three weeks later the surface of the wound was found to be smooth and concave, the borders were somewhat thickened, but also smooth and covered with mucous membrane, and without any sign of ulceration. The general health of the patient was greatly improved, her complexion blooming, and her weight increased; the hæmorrhage and the purulent discharge from the vagina had ceased completely, and regular menstruation had appeared. At the time of the publication of the case, eight months after the first scraping, no sign of a return of the disease was apparent.

Cases II., III., and IV. were very much alike; the disease had already made great progress, the lips of the os uteri were mostly destroyed, and the ulceration had spread up to the internal os, which could be reached by passing the point of the finger through a soft, easily bleeding mass. Simon brought the cervix into sight by means of his plate-shaped speculum in the breech-back position of the patient, fixed with a hook the edge of the partly destroyed portio vaginalis, and scraped and scooped away the diseased parts until the peculiar creaking sensation showed him sound tissue everywhere. He was enabled, after removing the lower cancerous masses, to pass his finger as a guide into the cervical canal, and thus operate with perfect safety up to the internal os. In one case the uterus was so movable as to allow of its being pulled down to the introitus vaginæ with Muzeux's forceps, whereby the operation was of course much facilitated. The hæmorrhage, although pretty considerable at the commencement, diminished very much as soon as the normal tissue was reached, and was, on the whole, much less than is usual during the extirpation of such tumors with cutting instruments. The eroded edges were seized with the forceps, and cut off with a curved knife. As in two cases no subsequent reaction and hæmorrhage ensued, the patients were allowed to leave their beds on the second day; in the third instance, only a circumscribed peritonitis supervened, which disappeared after a fortnight. All three patients improved visibly in general health, and two or three months elapsed before a second operation became necessary. In the summer of 1870, they were still alive, although the neighboring parts were nearly destroyed by the disease, and the scooping, therefore, could no longer be performed as thoroughly as before.

Case V. was operated upon by me in Heidelberg, in May, 1872, in the clinique of Prof. Simon. The cancer had destroyed the centre of the cervix, and proceeded as far as the internal os. I removed all the loose spongy tissue and excrescences in the manner described by Simon without introducing a speculum. The hæmorrhage was very slight, the reaction nominal, and the patient left the hospital the next day. Up to the time of my departure, a fortnight later, no news had been received from her.

CASE VI.—Last June, Dr. Alfred Wiltshire, of London, had the kindness to ask me to see a patient of his, Mrs. F., who had a carcinoma of the uterus and vagina in a very advanced stage. He had arrested the hæmorrhage by the frequent application of chromic acid, but wished something done to remove the cancerous vegetation, which constantly returned with great rapidity, notwithstanding the cauterization. I found the portio vaginalis entirely gone, the cervical canal extensively ulcerated, and the posterior wall of the vagina and cervix so far destroyed as to allow me at one spot to reach the mucous membrane of the rectum. This whole large surface was covered, especially about the fornix vaginæ, with numerous vascular vegetations, which I carefully scraped off, avoiding the dangerous quarter in the recto-vaginal septum. A cold-water injection was made, and a tampon saturated in a weak solution of chromic acid introduced. The patient was not under chloroform. There was no particular reaction; the watery discharge was profuse during a day or two, but then diminished, and the patient was able soon to go in the country, where she was still staying in pretty good condition two months later.

CASE VII.—Mrs. M., a patient of Dr. Wiltshire's also, at the West London Hospital, was seen by me

June 10, 1872. On examination, I found the portio vaginalis changed into a soft pulpy mass, which bled very readily on introducing the finger into the cervical canal; the uterus was moderately fixed by a ring of secondary cellulitis at the vaginal insertion; but the disease had apparently not as yet spread to the vagina. The case was one of medullary cancer of the cervix in the commencement of the second or destructive stage, without absolute loss of substance, which, however, would doubtless soon ensue. A radical operation was no longer applicable on account of the evident participation of the supra-vaginal portion of the cervix.

The patient had become somewhat weakened by the discharge and hæmorrhage, which could only be temporarily arrested by chromic acid. By removing the pulpy vascular vegetation and the soft diseased tissues of the cervix with the scoop, I hoped to take away the cause of the hæmorrhage, and give the patient a chance to recruit. I accordingly, without narcotizing the patient, rapidly scraped away the vascular portions of the growth, whereupon, as I had predicted, the momentary hæmorrhage ceased, and thereupon proceeded carefully to remove the diseased tissue of the cervix by gently scraping and rotating the instrument in the cervical canal. I found the disintegration so much more extensive than I had expected, however, that, after excavating a funnel-shaped cavity, the point of which reached the os internum, I desisted, and, partly from fear of getting too near the peritonæum, and partly to prevent excessive reaction, preferred finishing the operation at a second sitting. The tissue was so soft that I had to be very careful not to use any force in scraping. During one of the last and most gentle rotary motions, a round bit of substance of the size and shape of a filbert was removed from the right side of the cervix, leaving a smooth cavity. It would seem as though a circumscribed cancerous infiltration or nest of cells had been involuntarily lifted out of its bed. The pain felt during the operation was complained of as of a gnawing, sickening kind, but as not very intense. Cold injections were made, and a tampon saturated in a weak solution of sesquichloride of iron was applied. The patient appeared but little affected by the operation, and was left in a tolerable condition. No immediate reaction appeared, but, two days afterward, symptoms of a very violent attack of peritonitis came on, which prostrated the patient very much and gave rise to fears for her life. About the tenth day, however, a copious discharge of very fœtid fluid mixed with shreds took place from the vagina, which was soon followed by a marked improvement in the general symptoms, decrease of the peritonitis, and consequent increase of strength. With this discharge, a firm, solid mass of the size of a small pear came away, which was at first thought to be coagulated blood, but on closer inspection was found to be the whole body and fundus of the uterus, in fact, all that had been left intact after the operation, and minus what little had been destroyed by subsequent ulceration. The convex surface of the mass was smooth and shiny. Whether the peritoneal covering was adherent to the uterus or had remained *in situ* in the pelvis could not be ascertained—more probably the former, if we consider the unusually close adherence of the peritonæum to the fundus and corpus uteri and the almost entire absence of cellular tissue between the serous envelope and the uterus;* the anatomical relation of the parts, however, and the position of the uterus, as it were, in a pouch of the peritonæum, would point to the opposite view, wherefore I must leave the question undecided for want of proof either way.

On being cut open, the usual triangular cavity was found lined with the normal uterine mucous membrane. On one side was an opening with rounded edges, possibly the orifice of one of the fallopian tubes. The microscopical examination confirmed the diagnosis by showing the usual smooth muscular and elastic fibres of the uterine stroma. The length of the uterus was about two inches, the breadth one and a half inches.

July 1.—The patient had left the hospital, and was living with her sister. She was still unable to leave her bed permanently, but felt comparatively well, without pain of any description. There was a moderate muco-purulent, inodorous discharge from the vagina. The appetite and spirits were good, and there was every prospect of her doing well. On examination per vaginam, the fornix vaginæ was felt to be surrounded by a firm irregular ring, doubtless a remnant of the adhesive peritonitis; in the centre of this ring, where the portio vaginalis ought to be, was an opening, with ragged edges, into which the finger could be introduced without reaching the roof of the cavity, which, no doubt, was lately occupied by the body of the uterus. In all probability this cavity was closed at the top; but, in order to prevent any possible injury, no effort was made at the time to force the finger up and solve the mystery.

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* Dr. Farre, "Cyc. Anat. and Phys. Sup.," p. 161

What caused the sloughing away of the whole uterus is difficult to say. Perhaps the inflammation produced in the cervix by the scraping brought about an inflammatory thrombosis of the adjacent uterine arteries on either side, which almost alone supply the womb with blood, and consequent mortification of the uterus; the broad and antero-posterior ligaments then became adherent by means of the peritonitis, and the roof of the cavity was closed by exudation; or, the whole uterus was firmly fixed and compressed in a layer of plastic lymph exuded in the course of the peritonitis, the usual suppurative softening of this mass set in, and the uterus was loosened from its cellular connections and discharged, on the same principle as fibroid tumors are sometimes enucleated from their capsules by a suppurative process. An accurate knowledge of the anatomical relations of the case could hardly be obtained otherwise than at the autopsy, and we must therefore content ourselves for the present with mere conjecture. As no sign of the fallopian tubes was to be found in the discharged mass, the probability is that they, as well as the ovaries, remained *in statu quo*, or thereabouts, in the pelvic cavity.

The hopes and expectations which I had formed respecting the radical cure of the cancer, after the complete discharge of the uterus, were destroyed by a letter which I received from Dr. Wiltshire, Sept. 7th, in which he gives me the following report of the further progress of the case:—"On examination, Sept. 2d, the roof of the vagina was found to be contracted, thickened, and hard. At its upper extremity there was a cul-de-sac, into which the greater part of the first joint of the forefinger could be passed. This cavity was about the size and shape of a filbert; its walls were rough, and yielded blood on being touched. On the surface there was only a thin layer of soft tissue, which could easily be removed by the finger-nail, and below this the tissue was hard. The sound would not pass with such force as was justifiable through the filbert-shaped cavity. By the speculum a ragged-looking cavity was seen with irregular edges. A week or two ago, I applied some chromic acid; but on Monday, Sept. 2d, I contented myself with scraping the cavity with my finger-nail. The patient's health generally was as when you saw her; but she complained of much pain in the abdomen and around the back and legs. The pain appeared to be of a constant and wearing character, and was aggravated when she passed urine or fæces, at which times she had much bearing down. There was no invasion of the rectum through the tissues; but the top of the vagina could be felt to be hardened and thickened through the rectum. There has been no menstruation, and only some slight sanguineous discharge after specular or digital examination. There is a considerable amount of sero-purulent discharge, which is not offensive. The top of the vagina appeared to be fixed. No signs of the uterus could be felt. It is evident that the disease is invading the tissues around the cavity. Probably the surrounding parts were too much involved in the disease before we operated to render it likely, as we hoped, that most of the invaded parts came away at the time the uterus sloughed through. I dare say the lumbar glands were implicated even then. Anyhow, the case is an interesting and instructive one, and I have to thank you very much for your kind and valuable help in it," etc.

As Dr. Wiltshire—to whom I here desire to express my obligations for his kindness and courtesy during our professional intercourse—remarks, this case is one of great interest, and certainly of very rare occurrence. Prof. Gaillard Thomas (*loc. cit.*, p. 533) mentions two very similar instances reported by Drs. Barker and Mettauer, where the sloughing of the uterus followed the application of the acid nitrate of mercury, and the patients were thenceforth completely relieved of their uterine cancer. Kiwisch also relates a case of gangrenous sequestration of the cancerous uterus. The cases reported by Scanzoni, Rokitansky, and Virchow, although instances of spontaneous recovery from cancer, merely prove the possibility of necrosis of the cervix uteri and subsequent cicatrization of the wound (Klob, "Path. Anat. of the Female Sex. Organs," p. 189), whereas Dr. Barker's, Dr. Mettauer's, Dr. Habit's (of Vienna, Thomas, *l. c.*, p. 531), and mine are the only ones which have come under my notice where the whole uterus is stated as having sloughed away, and in no case, but the one now reported by me, was the necrotic womb found and recognized.

CASES VIII. TO XXIII.—The remaining sixteen cases operated upon by Prof. Simon differed in no respect from those related above under III. to V., and the course and results of the operation were so satisfactory, and varied so little from the rest, that, as I learned by personal communication within a few days (Sept., 1872), no special notes were made of them in the clinical books. Prof. Simon employs the scoop in scraping out cancerous growths in various parts of the body, such as the pharynx, orbita, rectum, external genitals, vagina alone, breast, or at any accessible spot. He reports scraping away a villous epithelial cancer of the bladder with a long thin-handled scoop after dilatation of the urethra; the hæmorrhage was quite abundant, but soon ceased, and no reaction of importance followed. I myself assisted in a case of cancer of the rectum, which Sir William Ferguson and Nélaton had pronounced beyond medical aid; defæcation even in a fluid state was completely interrupted by the closure of the rectum through the cancerous nodules, cathartics would no longer act, and the patient had lost his appetite and was in a most miserable state, from which there seemed no relief. Prof. Simon scraped away the obstructing growth with the usual slight hæmorrhage and reaction; the bowels were made to act by injections, and the patient's health rapidly improved, although, of course, but temporarily. In all, some ten similar cases have been operated by Simon with the same good results.

I saw Billroth operate on a similar case in a somewhat less advanced stage, in which he removed the cancerous growth with the knife. The hæmorrhage was very profuse, and the result rather unsatisfactory. The danger of going too far and injuring the peritonæum or some of the vessels in the pelvic cavity caused the extirpation of the cancer to be much less thorough than would have been the case with the scoop, and rendered a speedy repetition of the excision necessary.

Allow me to recapitulate: Wherever there are loose cancerous granulations, fungoid excrescences, or the proliferant papillæ of vegetating epithelioma, from which the exhausting hæmorrhage and discharge come, wherever the cancerous deposits have proceeded so far into normal tissue, and are so extensive as to be beyond the control of the knife or caustics, there the use of the scoop is indicated, and there its beneficial effects will be most felt. The danger of the operation is very slight, the pain hardly worth mentioning, the cancerous substance is more thoroughly, safely, and easily removed than by means of knife or caustics, and the return of the disease much less rapid.

Having thus explained the action and employment of the scoop, mentioned the cases in which it is available, and especially those in which it performs what hitherto has been neglected for want of a proper instrument, and enumerated the advantages it offers over the usual cauterient treatment, I can only, in conclusion, assert my conviction that the unfortunate class of patients suffering from that terrible disease, cancer, would be greatly benefited by its general introduction, and express a hope that the profession will see fit to give it a fair trial.

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

REPORTED BY JAMES V. INGHAM, M.D., SECRETARY.

STATED MEETING, APRIL 4, 1872. DR. WM. GOODELL, PRESIDENT, IN THE CHAIR.

DR. WM. GOODELL exhibited a specimen of

FIBROID TUMOR IN A POST-PARTUM WOMB.

The womb contained in its posterior wall a fibroid larger than the ovum at term. It had been removed by Dr. W. B. Atkinson from the body of a light mulatto woman, aged thirty-five, who died quite unexpectedly on the tenth day after giving birth to a fully-developed but still infant. This enormous tumor must have grown very rapidly indeed during gestation, for previously to her delivery she had not suspected its existence. She was, however, extremely fat, and the thickness of her abdominal walls had probably prevented an earlier discovery. Although a primipara, the labor was not tedious, but this was most likely owing to the presentation—that of the feet—which enabled the attending physician to render early assistance. Strange to say, there was no post-partum hæmorrhage, nor any other complication whatever. After the birth of the child and the delivery of the placenta, the size of the womb led the physician to think that there was yet another child to be born. The woman went on well for a few days; was able to sit in a chair, when she suddenly became "very weak," as her friends described it, and died quite unexpectedly. Although the fibroid had commenced to soften at its centre, which contained a cavity filled with putrilage, Dr. Goodell remarked that he could not attribute the death of the woman to any septic or pyæmic cause. The clinical history of the case pointed rather to embolism of the pulmonary artery. That the causes of sudden death after delivery were always obscure, in spite of the light which science had thrown on them. But in this case the theory of puerperal embolism seemed to him very defensible; for, from the very imperfect contraction of the womb—splinted up as it was by the fibroid —some one of the physiological clots of the unconstringed uterine vessels could easily have become long enough to project into a large vein, where its tip might have been washed off and swept into the pulmonic circulation. He stated that pregnancy very much enhanced the peril of a woman whose womb contained a fibroid tumor, whether seated in the upper or the lower segment; but that, very fortunately, either from the flux of blood, which washed the ovum away, or from a disturbance in the relation of the Fallopian tubes to the ovary, conception rarely took place. If pregnancy should happen, the unequal development of the uterine walls would usually bring on an early abortion. That when, in a pregnant woman, a fibroid was found seated in the lower segment of the womb, and in front of the presenting part of the child, causing a fear that the labor might prove difficult, dangerous, or impossible, the physician had certain rules for his guidance which he could unhesitatingly adopt. But that there was no unanimity in the profession with regard to the proper conduct of a physician during the pregnancy of one of his patients who was known to have a large fibroid in the upper segment of her womb. That in view of the danger from septicæmia, or from pyæmia, from rupture of the womb, from peritonitis, uncontrollable postpartum hæmorrhage, and from unruly and exhausting afterpains, he himself, under such circumstances, would be disposed to follow the teachings of Nature, who usually in these cases greatly abridges the term of gestation.

Dr. J. H. Packard asked the Society for information in regard to the practice of its members in

THE APPLICATION OF THE OBSTETRIC FORCEPS.

He wished to know at what part of the second stage of labor the necessity for their use was generally recognized, and asked whether the wearing out of the expulsive efforts of the mother did not always constitute a demand for their application. He believed that the only objections to their use that can be advanced are, 1st, the aversion and prejudice of the patient against them; 2d, the danger to the perinæum when the other symptoms do not demand their use; 3d, the danger to the fœtal skull, although such injuries, and sometimes fractures, do not always result as badly as might be expected, and cited cases in illustration.

Dr. A. H. Smith stated that he had long made it his rule, in normal pelves, never to allow his patient to suffer long after the full dilatation of the os uteri had taken place, and in contracted pelves never to wait for such dilatation. He never delays their application if such delay would cause a prolongation of suffering either to the mother or to the child. He had always taught, and firmly believes, that there can be no possible injury to either if the forceps are properly applied, and the proper degree or direction of traction is made. The form of the instruments must not deviate greatly from that adopted by either Dr. Hodge or Dr. Davis, and the blades must be applied to the sides of the child's head in order to secure the greatest immunity from danger. If so applied, their use always diminishes the liability of injury to either mother or child. If not applied to the sides of the head, there is great danger of injury resulting from the direction of compression. In the oblique application there is always a danger of paralysis of the eye, fracture, or necrosis of the frontal bone, and almost a certainty of distortion of the facial tissues. As regards the perinæum, he believed that there is less danger when the forceps are used than when they are not, owing to the complete control that they give over the motions of the child's head, and the great ease with which, by the forcible flexion of the head, its too rapid passage through the vulva could be prevented.

Dr. Duer thought that the ground had been completely covered by Dr. Smith, and believed that it was a question of judgment and skill, the more of which the obstetrician possessed, the more frequently did he use the forceps.

The President hoped that there would be a free expression of opinion, as he believed the subject had a medico-legal value in so far as injury to the mother or child is concerned.

Dr. Betts had often experienced the difficulty mentioned by Dr. Packard in knowing when to apply the forceps. He believed that the sanction of the Society for their early application would have great value, and mentioned several cases where the ignorance or delay of the attending obstetrician nearly killed the patient.

Dr. Githens quoted Dr. Hamilton's notes of nearly 800 cases of labor and no still births, the forceps having been applied once in every eight births. Dr. Githens used them about once in every seven cases, principally in primiparæ, applying them, however, as soon as possible in all cases.

Dr. J. S. Parry said that he always used them as soon as he could. Thought that there could be no danger if properly applied, but did not agree with Dr. Smith as to the absolute necessity of invariably applying them to the sides of the child's head.

Dr. Jenks quoted foreign authority in support of their use in the early stages of labor, and mentioned a case recently occurring in his own practice where the spine of the ischium projected into the cavity of the pelvis. He applied the forceps an hour after the second stage of labor had commenced, and easily delivered, thus saving the mother many hours of suffering.

Dr. J. L. Ludlow remarked that from the shape of the instruments they should be applied to the sides of the head, but the best obstetricians have been deceived as to the position of the blades. If the end is accomplished, it does not matter exactly how the forceps are applied. He, however, always tried to put them on the sides of the head. He mentioned a case where the child had been temporarily deformed by the oblique application of the forceps to its head, and also a case in which, there being obliquity of the uterus, a contracted pelvis, and a large head, the consultant was unable to apply the forceps in any position.

Dr. W. B. Page said that he applied the blades as nearly along the long diameter and over the sides of the child's head as possible. Occasionally you have to apply them as you best can. Make traction in the axis of the superior strait, pelvis, and vulva. It is difficult to apply them to the head after the body has been born.

Dr. A. H. Smith stated that he preferred the Davis forceps with the button lock. He thinks that they fulfil every indication needed. They have advantages over Hodge's forceps. He then referred to a case where the Hodge forceps had been applied to the child's head in a contracted pelvis, two hours had been occupied, and the child could not be delivered as the instruments slipped. It was a case in which there was an abortive effort to form a double-headed monster. The Davis forceps, being then applied, were successful. The head was so large that the blades of Hodge's forceps were in a parallel position, and unable to grasp the head and retain it. He contrasted the Davis and Hodge forceps strongly in favor of the former; there is more compressing power in the Davis forceps. It has been said that it is impossible to apply them at the superior strait; but it can be done, he having frequently so applied them. He thought that they can be applied, and can deliver a living child, where it is fruitless to use any other forceps. Objections have been made to the handles of the instrument. But they are not needed to drag on; it is not necessary to draw in the line of the handles, but in that of the pelvic axis. Pressure is to be made on the lock, and not traction on the handles; the latter being used only to steady the forceps. The temptation is strong in young men to draw too forcibly on the handles. The great advantage of the button-lock is the ease with which it is locked, as the natural tissues are not pinched or in the way.

Dr. J. L. Ludlow enquired if there was not more likelihood of hæmorrhage after rapid deliveries with the forceps, as the labor may not be sufficiently advanced for the uterus to be suddenly emptied. He thought that the uterine tissues were not prepared for delivery when the labor was hastened as rapidly as represented by Dr. Smith.

Dr. A. H. Smith said that no obstetrician would drag a child from the mother except in rare instances. If the forceps are applied correctly, no injury can accrue to either mother or child. It is said by some that the forceps should be applied to the sides of the pelvis, and the head grasped regardless of position. Dr. Barnes assumes that in the oblique and transverse cranial positions the forceps should be applied to the sides of the pelvis. Dr. Smith believes that this is dangerous to both mother and child. No mistake should be made in the diagnosis of presentation and position; it is absolutely necessary to know how the sides of the child's head lie, unless there should be some malformation. No mistake can be made if the ear can be felt; this is a positive sign. If the head is grasped over the face and occiput, the difficulty in contracted pelves is increased, not diminished. In his experience he had found it easier to apply the forceps on the sides of the head in the transverse position, when the head is above the superior strait, than when it has descended and become impacted.

Stated Meeting, June 25, 1872. Dr. Wm. Goodell, the President, in the Chair.

APOPLECTIC PLACENTA.

Dr. A. H. Smith exhibited for Dr. Ellwood Wilson an apoplectic placenta expelled during the seventh month of gestation. There were no abnormal symptoms during the pregnancy, and nothing had occurred to attract attention until the sudden labor, and its termination in the expulsion of a dead child. The placenta was small, with a large coagulum in one lobe. There was no history of any accident to account for the placental hæmorrhage. There was a slight calcareous deposit upon the maternal surface of the placenta. The patient is not of an apoplectic tendency, but this is the second miscarriage from this cause.

Dr. W. F. Jenks remarked that the specimen presented evidences of former hæmorrhages similar to the one that caused the miscarriage. He attributed them to a weakness of the vessels rather than to disease.

Dr. J. L. Ludlow thought that the most interesting point was the condition of the patient; if apoplectic, it constituted an element of prognosis in future labors.

Dr. W. Sinkler stated that he knew the patient, and that there is no predisposition to apoplexy; on the contrary, she is unusually healthy.

Dr. Wm. Goodell ascribed the hæmorrhage to the calcareous deposits. The placenta thus became too stiff to respond immediately to the alternate contractions and dilatations of the womb, or to sudden succussions, and, as a consequence, was partly detached. He had seen several hæmorrhages attributable to this cause, and regretted that at the previous abortion the placenta had not been examined for lime patches.

The discussion on

THE FORCEPS

being next in order, Dr. Robert P. Harris exhibited seventeen varieties of obstetrical forceps, in illustration of the fact, that with but few exceptions, these instruments have not been made either with the view of fitting the sides of the fœtal head or of preventing the marking of the scalp, the fenestræ being still of the same loop-shape that was adopted by Chamberlain, with their edges scarcely at all bevelled or rounded off. The improvements made by Davis of England, and Hodge of this city, with subsequent changes by William Harris, Bethel, and Ellerslie Wallace, have introduced into the practice of Philadelphia, and in many parts of our country, through the alumni of its two medical schools, the use of instruments made especially with a view to avoid the various objections which have been urged against the forceps as a means of injury to the mother and child. No man has labored more carefully for the accomplishment of this object than Professor Hodge, producing his present instrument step by step in gradual changes and improvements, as experience pointed them out to him, commencing with an important alteration in the long forceps of Baudelocque, and gradually departing from it until but little of the original type is left.

In illustration of this fact, Dr. Harris exhibited two of the early improvements of Dr. Hodge as historical curiosities: in one he changed the cephalic curve, and in the other the pelvic, opening the fenestræ of the second, bevelling their edges, and giving them an oval instead of loop shape. These instruments were made unnecessarily heavy according to our present ideas, but at the time of their production strength was imparted more by weight of metal than hardness of temper, the same amount of stiffness being now possessed by forceps of half the weight. Even the final shape of the Hodge forceps, as made by Rohrer, although much heavier than those made now, was sometimes materially altered in use by the bending of the shanks under pressure.

The late Dr. William Harris, who practised obstetrics extensively for forty-six years, perhaps made a more frequent proportionate use of the forceps than any of his contemporaries, employing them in about one-seventh of his cases, and with such success that for thirty years he did not lose a patient in labor or from its immediate effects. He was very partial to the blades of Davis, and devised an instrument of remarkable lightness, which, although extensively used, never became altered in shape. It was made by Schively about twenty-five years ago, and closely resembled the instrument now known as the Wallace forceps, except that the latter has much longer shanks which are more directly superimposed, and is better adapted for use at the superior strait, for which the former was not intended, Dr. Harris employing for that purpose the Hodge forceps. The Harris forceps were intended to shorten labor and prevent exhaustion in women who were deficient in muscular force, and who, if unaided, would accomplish in many instances their own delivery, but at the expense of long suffering and wasted strength.

The Wallace forceps have come into very extensive use, especially among the graduates of the Jefferson Medical College. The instrument is a combination of the Davis blades and Hodge handles, both somewhat modified, is very light, and well adapted in skilful hands as a tractor, to deliver the fœtal head without injury to the mother or pressure-marks upon the child.

The seventeen varieties exhibited were as follows: Siebold's, Baudelocque's, Busch's, Ziegler's, Haighton's, Rohrer's, Philadelphia, two experimental specimens of Dr. Hodge, Hodge's, Davis's, Sir James Y. Simpson's, William Harris's, Bedford's, Elliot's, Denman's, Comstock's, and an improved Haighton. There was also shown a pair made in imitation of Davis's, but so badly shaped as to produce in the hands of an inexperienced physician such extensive lacerations of a woman's vagina and perinæum as to cause her death, and to result in a suit for malpractice which cost the operator $5,000. The Siebold forceps had also been made by excessive force the means of fracturing a woman's pelvis, and causing her death.

The Haighton forceps were at one time quite extensively manufactured in this city, and largely used, because their broad oval fenestræ, with concave edges, render it possible to operate at the inferior strait without injury to the child's scalp. They were not well shaped for avoiding rupture of the perinæum, and were displaced by the curved instruments of Davis, Hodge, etc. With the exception of the Haighton, Hodge, Harris, and Davis forceps, all those exhibited had narrow loop-shaped fenestræ, which could not admit the parietal protuberances of the fœtal head.

The forceps of Bedford and Elliot of New York, Simpson of Edinburgh, Comstock of St. Louis, etc., are all formed after the German type, with long blades and wide interspaces, and are based upon the idea that it is more important to introduce the instrument transversely, as regards the pelvis, than to apply the blades over the sides of the child's head. The advocates of these instruments contend that they are intended to act as tractors, and to avoid compression, for which purpose the majority of Philadelphia obstetricians believe they are not suited, because the adaptation to the sides of the fœtal head requires less compression to avoid slipping, by reason of the increased friction produced by contact with a long, broad, oval surface, and of the projection of the parietal protuberances through the fenestræ. They contend that the blades of Davis, by enclosing the fœtal head with the parietal protuberances projecting, accompanied by a minimum degree of pressure, command the head in its movements, diminish its size in compensation for the space occupied by them, and enable traction and rotation to be made to the greatest advantage, and in close imitation of the natural process of labor.

Dr. Harris believes that one great cause of the difference of views held by obstetricians with regard to the various uses and capabilities of the forceps is due to the differences of form in the instruments respectively employed, and that upon sound mechanical principles it will be found that a fitting object can be more securely grasped, and with less pressure, than one which does not fit the surfaces of the forceps applied to it. It is upon this very principle that the fenestrated forceps for calculi have been designed.

The President remarked that in the application of the forceps he was governed by the position of the child's head, and not by the curve of the pelvic axis. He therefore always aimed to apply the blades in the direction of the occipito-mental diameter, and thus seize the head in its biparietal diameter. He thought, however, that this — the cephalic — method of application should not be taught dictatorially to students, to the utter exclusion of the pelvic method; some scope should be given them. For, not only does the former require a knack which can be gained only by experience, but cases will arise in which it would be found impossible. For instance, in certain rare forms of irregular development of the pelvis; in cases of children long dead, and therefore jammed down—head, neck, and shoulders—into the pelvis; or in neglected cases in which the soft parts of both mother and child have become swollen—cases in which the accoucheur may be thankful if he gets the blades on at all. While, therefore, the student should be taught to seize the head by its sides, he should also at the same time be told that, when foiled in this, he is justified in grasping the head wherever the blades adjust themselves.

That his reasons for regarding the child's head rather than the mother's pelvis were as follows: Firstly, that the uniform head-curves of the forceps are made evidently for the only two uniform surfaces of the child's head—viz., its sides; and that there only are the blades the least hurtful. For there they become immovable, as it were integral parts of the head, and there can the brain be compressed with the greatest safety. The pelvic curves were an afterthought, not absolutely necessary, but merely for convenience of application. Smellie, who devised the pelvic curve, did so simply to get his blades more readily over the sides of the child's head. Secondly, that the transit of the fœtal head through the obstetric canal is easiest, and demands less force, when the cervico-bregmatic plane preserves a parallelism with the successive planes of the pelvis through which it passes; and when the occipito-mental diameter coincides with the axis of the obstetric canal—viz., when synclitism is preserved, and the head descends edgewise. To maintain these conditions is, therefore, the obvious duty of the accoucheur. Hence, when called upon to assist nature, he should be obedient to her laws, and should carry out her intentions. He should, therefore, so apply the forceps to the sides of the head that the posterior fontanelle would be in a line with the shaft, and the sagittal suture equidistant from each blade. For then, and only then, will the line of traction coincide both with the long diameter of the head and with the axis of the obstetric canal. When, on the other hand, the blades are applied obliquely on the head—that is to say, on ununiform surfaces of the head, for which their uniform curves are ill adapted—not only will one of them be further on than the other, but the handles will be thrown to one side of the occipito-mental diameter, making an angle with it. As a consequence, lateral obliquity is induced, the condition of synclitism is destroyed, and the long diameter of the head is forcibly deflected from a coincidence with the obstetric axis.

He further contended that the German school and its adherents, by ignoring the absolutely necessary head-curve of the blades, and by regarding only their factitious pelvic curve, were not only violating—as has been shown—the plain laws of mechanics, but were in fact unwittingly doing the very thing which they deprecate. For if, in an unrotated position of the vertex—say, of the L. O. A.—the blades are applied in the transverse diameter of the pelvis—viz., obliquely on the head—one of two things must happen, either, as in some cases, the blades will remain constant, and the head rotates within them—which fortunately for the integrity of the child's features is by no means the rule—or else, *pari passu*, with the descent of the head will the blades rotate. In the latter case, then, at the close of the labor, the convex edges of their pelvic curves will be deflected as much to the left of the axis of the obstetric canal as they would have been to the right of it had the application been made at first to the sides of the child's head. That in this respect, therefore, there is in each method of application no essential difference so far as the traject of the blades is concerned. For, by the German method, at the close of labor, this assumed case of a L. O. A. position, the blades will be found in the same diagonal position, *quoad* the pelvis, as they would have at first taken had they been applied to the sides of a head in the R. O. A. position.

In other respects, however, there are vital differences between the two methods. For instance, in a right occipito-posterior position of the vertex demanding assistance, whenever the blades can be adjusted to the sides of the head, and traction with a firm grasp is then made in the direction of its long diameter, or as near to it as this often embarrassing position will permit, nature is so closely imitated that anterior rotation of the vertex takes place relatively more frequently than in unassisted cases. That in such positions he had repeatedly been compelled to hasten the removal of the blades, lest their pelvic curve should become reversed by the rapid rotation of the head. In fact, on two occasions he had been caught with his forceps turned upside down before he could remove them. Now mark what happens when, in the same position of the vertex, the blades are passed up along the ilia. The male blade, by gliding over the right brow of the child's head, tends to rotate the forehead to the pubes; while the female blade, in its passage over the left occipital region, contributes as well to effect the same change by pushing the occiput towards the sacrum. When the blades are locked and traction is made, a rotation of the vertex into the hollow of the sacrum is so inevitable, that the advocates of this method console themselves for such a misadventure by trying to believe, that it makes very little difference whether the occiput rotates anteriorly or posteriorly. But were the question referred to the woman herself, it would not remain mooted very long.

That while locking in the pelvic application of the forceps is sometimes easier than in the cephalic, yet it is often more difficult from the tilting up of the concave edge of one blade, and of the convex edge of the other, by riding upon opposite inequalities. That the gripe is always less firm; indeed, so much so that some English forceps have a third blade, shortened, and moulded to fit the occipital region. That the integrity of the perinæum is far more threatened because the blades, from not admitting into their fenestræ the parietal protuberances, and, therefore, from not being embedded in the child's tissues, add their thickness to the bulk of the head. That there is greater danger from facial paralysis, dangerous wounds, and from positive mutilations; the very graphic warnings against these accidents proving that they have occurred. That Tristram Shandy's experience was no fancy sketch, for he (Dr. G.) had seen disfiguring scars, and had heard of two infants in this city which bled to death from sloughing wounds of the brow caused by the frontal blade. That the occipital blade may destroy life by pinching the cord when coiled around the neck, or by too great or too protracted a pressure upon the medulla oblongata. That the danger from this pressure upon the base of the brain is so well appreciated that, when the forceps are applied in the ilia, a rapid delivery is aimed at in order to save the child's life. Thus, as late as in 1867, two eminent Scotch accoucheurs, in a discussion before the Edinburgh Obstetrical Society,* made the startling statement that they rarely kept the forceps on longer than fifteen minutes, and never over twenty minutes. What vibratory and rotary movements of the forceps handles; what trituration of the mother's tissues; what injuries to the child, did not this desperate haste imply! No wonder that the forceps is in bad repute in Great Britain! No wonder that the craniotomy statistics of that country excite the sneers of Italian physicians—as the preface to Dr. Barnes's last work informs us! That an English physician had written a paper upon the long-continued influence of abnormal parturition on the mental and physical condition of the child;* and in it had tabulated several forceps deliveries as the cause of convulsions, strabismus, difficult deglutition, and spastic contractions. In each one of these instrumental cases such injuries were sustained as, "after twenty minutes' application of forceps, a child was born with laceration at external right frontal eminence and behind ear; did not rally for three hours"; "child black, swollen, born with wound on left forehead"; "child black and supposed to be dead, restored with difficulty"; and "child's face lacerated." Such injuries could not have happened had the blades been adjusted to the sides of the child's head, which they exactly fit.

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* *Edinburgh Medical Journal,* vol. xii. p. 755.

That he (Dr. G.), being alive to the fact that he was extracting living flesh from living flesh, and relying upon the well-established truth that compression of the head in its transverse diameter is the least dangerous to the child, had often been over an hour, and sometimes over two hours, at the forceps. That, when the forceps are thus applied, when traction, as a rule, is limited to the times of the pains, and during the intervals the handles are unlocked or slightly separated; when the dorsal decubitus is preserved, and the physician makes direct traction with his arms, and not with his back, standing upon both his feet, and not laying out his whole strength by bracing them; and, lastly, when the force is exerted more by pushing the lock backwards and downwards rather than by traction on the handles, or by that leverage movement so liable to be abused by beginners, moulding of the head may be allowed to go on for an almost indefinite length of time, with safety both to the mother and to the child.

So impressed was he with the advantages gained by applying the forceps to the sides of the head, that there were to him no exceptions to this rule, not even in transverse cranial positions at or above a brim shortened in its conjugate diameter. The objection that the bladder, urethra, and rectum will sustain injury is purely theoretical, for no force should be used in the application, and, when adjusted, the blades are lost upon and buried in the soft tissues of the scalp and cheeks, which bulge up around and through the fenestræ. Indeed, the supposed danger is actually much less than when the other plan is resorted to, since the bilateral compression at once compels the equitation of the parietal bones, and the consequent reduction of the offending biparietal diameter. Another objection had been raised—one which, in his genial way, the late Prof. Elliot had made to him, in a discussion upon this very point—viz., that in the normal pelvis the axis of the superior strait strikes a point on the coccyx a little above its tip; that the double-curved forceps, applied in the conjugate diameter, becomes virtually a straight one so far as its relation to the pelvis is concerned, and that, therefore, it cannot, at the brim, be applied to the sides of the head in transverse cranial positions. This was the hackneyed argument of many European authors; but to this he (Dr. G.) could reply, that practically he had found this method of application to be more easy in such positions than in unrotated heads arrested in the pelvic cavity; that some good British accoucheurs still use the straight forceps at the brim; that one of the best cephalotribes (Kidd's), constantly applied above the brim, has straight handles and blades; and that, in pelves contracted in the conjugate diameter, the axis of the superior strait often strikes a point in the perinæum anterior to the coccyx—for the rachitic disease which has caused this deformity has also hollowed out and pushed back the sacrum and shortened its chord.

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* *London Obstetrical Transactions,* vol. iii. p. 293.

Dr. Goodell stated further that he used Hodge's or Davis's forceps, according to the high or low position of the head, and applied them early in order both to save the woman from prolonged suffering, and to avoid any swelling of the mother's and child's soft parts. That, as a rule, he waited for the os to dilate or to become dilatable, but he often applied them as a dilating wedge to a rigid os. Whenever the waters had drained off early, and the head did not bear firmly upon the cervix, he rarely waited for the os to expand, but dilated it with the forceps and enclosed head. That the forceps could generally be resorted to at an earlier stage of labor than version, for it could usually be applied whenever the os would admit the cone only of the fingers. That a few days ago he had been called in to a case of eclampsia, in which delivery was urgent. For some unexplainable reason the dilating bags kept slipping out, and, the child being dead, he had perforated its head and delivered it by the forceps through an extremely rigid os, into which neither he nor the attending physician could squeeze in four fingers. That the secret of getting in the forceps through such small openings is, to push the first blade so high up that it shall be wholly lost upon the head, and then, the os being now occupied by the slender shank alone, there is just room enough left to coax in, by a gentle see-saw movement, the second blade. The first blade is then to be pulled down into position before locking is attempted.

Dr. Goodell remarked, finally, that in timid women he often used the vectis, because it could be slipped on without their knowledge. He passed it in, on such occasions, usually over the sacral side of the occiput, and tried to apply it so as to admit the occipital protuberance in its fenestra. That he aimed to use it as a hook upon the base of the occiput, viz., as a tractor; but that, to maintain its hold, a certain amount of lateral pressure upon the child's head is necessary, which partly converts its action into that of a lever of the third kind. That in mento- and occipito-posterior positions, and also in cases of imperfect flexion and tardy extension, he could highly recommend this much-neglected instrument, when so applied as to meet the indication. That he had very recently been trying the following method of Prof. Fabbri, of Bologna, in transverse cranial positions at the brim, and had been pleased with the result: The vectis, passed over the pubic side of the mastoid region, is at first used as a lever of the first class; the left hand, at rest, representing the fulcrum, and the right hand becoming the power by raising the handle—in other words, each hand acts in opposite directions. When the handle is raised high enough to secure a firm hold, the right hand must be kept at rest, to become the fulcrum of a lever of the third class, while the left acts as the power. This compound action compresses the head in its biparietal diameter, and causes it to revolve around the promontory of the sacrum as the centre of motion, and to roll over into the pelvic cavity.

Dr. G. then exhibited the vectis which he himself used, and said that it could be procured from Mr. Gemrig, who had made a faithful copy of it. It had a sharp curve, an honest wooden handle, in place of the ambitious pessary-fenestra usually found in the American vectis, and, by a joint in the shank, could be folded up into a very small compass. Having stumbled upon it in the East, he did not know the inventor, but believed him to be Dr. Copeman, of Norwich, England.

To a question of Dr. Jenks, Dr. Goodell replied that he never hesitated to apply the forceps to the so-called "movable head," although it was necessarily above the superior strait.

In doing this, however, sometimes the lock disappeared within the vulva, and there was no certainty of catching the head laterally if it was very movable. If deemed necessary, after the fixation of the head, the forceps could be reapplied.

Dr. Jenks called attention to the fact that the use of an instrument constructed on the same principle as Simpson's or Naegele's was co-extensive with the field of the application of the forceps to the sides of the pelvis. The fact that the distance between the blades when locked is three inches shows that it is not intended to act to any great extent as a compressor, except in so far as this is necessary in order to enable the instrument to obtain a firm grasp on the head, which is, however, mainly effected by the close correspondence of the cephalic curve to the head-globe. It is retained in position, and pressure is effected by the bony pelvis and the soft parts of the mother, hence a relation always exists between the amount of pressure and the degree of contraction. By this means, also, pressure is exerted on every point in the circumference of the head, being greatest, of course, in that diameter which must be moulded to fit the contracted diameter of the pelvis, and not, as is the case with instruments which act as powerful compressors, mainly at the points of contact of the blades with the cephalic globe. The yielding bones of the head, when subjected to this combined pressure at the pelvic inlet where contraction usually occurs, can be moulded to an extent which would prove fatal to the child, were this effected by traction and local pressure by means of the forceps often employed, as the indentations in the parietal bones in cases of contracted pelvis when delivery has been effected without instrumental aid, after powerful and long-continued uterine efforts, prove.

The great advantage which results from the use of an instrument intended only to supplement a deficient *vis a tergo* is that the mechanism of labor can, and does in most cases, when the contraction is not too great, proceed undisturbed, the head rotating anteriorly inside the blades. In these cases, when this rotation does not take place, we only imitate nature, for, in cases of contracted pelves, when the maternal efforts are finally sufficient to effect delivery, we find that this rotation of the head does not occur until late in the process of mechanism.

The fact of rotation of the head occurring within the blades cannot admit of any question. Any one who has used an instrument where powerful compression is not exerted has had repeated opportunities of verifying the fact. The testimony of Braun, Hohl, Scanzoni, Schröder, and others is full and decisive on this point. That this rotation does really take place, and that the operator is not deceived by having, in fact, applied the instruments primarily on the sides of the head, is proved by the marks of the blades over the brow and behind the ear, these marks showing the application of the instrument in the fronto-mastoid diameter at the superior strait, when the want of relation between the head and pelvis was sufficient to cause the close adaptation of the blades to the head, and their pressure into the soft tissues of the scalp, while the position of the blades on the sides of the head in its passage through the vulvar outlet leaves the fact of rotation beyond doubt.

The possibility of the application of the instrument on the sides of a movable head, when the sagittal suture occupies the transverse diameter, has been questioned by many and denied by not a few prominent obstetricians. Schröder, in the last edition of his text-book, writes: "If the head presents with the sagittal suture approximating the transverse diameter, the blades of the instrument must lie in the antero-posterior diameter of the pelvis, in order to grasp the head in the biparietal diameter. But since they *cannot be applied in this way*, there is nothing left when the head presents transversely, but to apply them obliquely on the head." Prof. Elliot also states that "under these circumstances the head is always seized obliquely."

But not to multiply authorities, though this would be an easy task, and granting the possibility of applying the instrument in the biparietal diameter of the movable head, how is it with regard to the *expediency* of the use of the forceps under these circumstances? Schröder calls attention to the fact that so long ago as the time of the younger Stein the value of version to the feet in cases of moderate contraction of the pelvis was recognized, and his apothegm has been ofttimes quoted, viz., "The forceps and version are mutually exclusive, for, while version is practicable, the forceps are contraindicated, and, when the use of the forceps is justifiable, the time for the execution of version has passed." In our own time the value of version in cases of moderate contraction, or when rapid delivery is advisable on account of the mother or child, is generally recognized. No special question in obstetrics has been answered with more decided unanimity than this—witness the writings of Naegele, Hohl, Scanzoni, Braun, Hacker, Martin, Simpson, Barnes, Braxton Hicks, and others.

If the difficulties in the application of the instrument to the sides of the movable head, and its subsequent delivery, are such, then, as to lead to the general substitution of another operation, how much more serious and difficult is its application when some time has passed since the commencement of labor, and the uterine pains have driven the head into the contracted brim as far as possible, so that it is nipped between the projecting promontory of the sacrum and the symphysis pubis! Nothing remains but the application of the instrument to the sides of the pelvis, and this condition it is which leads to the common testimony of those who hold that the forceps *should* be applied to the sides of the child's head, but admit that they are often disappointed in their efforts, and that the rule should not be held as an absolute one. And yet it is this very condition which in a large majority of cases justifies the use of the forceps, viz., slight contraction due either to rachitic deformity, or, what is very much more common, simple antero-posterior contraction of the pelvis, with no change in the contour or curvature of the sacrum, a condition so admirably described by Michaelis, and later by Schröder. In these cases the blades will grasp the head in spite of any efforts to the contrary in the oblique or fronto-mastoid diameter; in other words, they are applied to the sides of the pelvis, for this term "sides of the pelvis" must not, as is often the case, be taken to represent mathematically the terminations of the transverse diameter, but the space between the ileo-pectineal eminence and the sacro-iliac synchondrosis. It would be well if the term "sides of the pelvis" should be abandoned, and the relation of the instrument to the oblique diameter of the head substituted. The application of the instrument in these cases is not, then, a matter of election, but of necessity. The use of the forceps when the head has already passed into the cavity, or is engaged at the outlet, presents but one point of interest—viz., in occipito-posterior positions. It is strange that a premature interference with the mechanism of labor still characterizes the practice of this country. Capuron stated dogmatically that nature never could complete the labor under these circumstances, and hence, as soon as this position is recognized, it must be rectified, while Dr. Dewees condemned as "unfit to practise obstetrics the man who could not detect and change this position of the head." In point of fact, we find, however, that here, as in so many other instances, a mistrust of the powers of nature has led to a wrong conclusion, for, in the vast majority of cases (96+ pr. ct., Simpson) spontaneous rotation of the occiput anteriorly takes place, when the wanting factor in the problem—viz., the resistance furnished by the perinæum—is supplied. The rotation, then, which the operator fancies is due to his efforts would in the great majority of cases have occurred if the case had been left to nature, or at most if merely traction efforts had been exerted in order to bring the head on the perinæum; indeed, we not unfrequently find expressions of wonder at the ease and rapidity with which this rotation takes place after the deficient expulsive force has been supplemented by the forceps, the rotation being due to simple mechanical relations of the head to the posterior pelvic wall and its continuation, and not to the efforts of the operator to force a rectification of position. Nor is this forced rotation of the occiput forwards without danger; for, if the shoulders do not follow the movements of the head, serious injury to the child will result. In these cases, we have simply to *allow* rotation to take place anteriorly, if, as is usually the case, such is the leading tendency of the head. If, however, as exceptionally happens, the occiput rotates into the hollow of the sacrum, the difficulties of delivery with the forceps are not so great as usually stated in the text-books, as Braun, Barnes, and others have shown.

It has been urged that after all there is no great difference between the application of the instrument in the antero-posterior at the superior strait, and in the oblique diameter, if rotation of the head does not occur within the blades. In reply to this argument, attention need only be called to the fact that in the first case the instrument passes from the superior strait to the outlet, with its pelvic curve at first opposed to the sides of the pelvis, and only gradually approaching correspondence with the pelvic canal, a rotation of a quarter of a circle being necessary, while in the second mode of application the pelvic curve of the instrument approximately corresponds to the pelvic curve of the mother at the brim where contraction usually exists, and only passes through the outlet where there is no difficulty with a want of correspondence.

With regard to the alleged injuries to the child, it may be said that they do not follow the application of the forceps to the oblique diameter of the child's head more frequently than the other methods of application, unless a powerfully compressing instrument is applied in the oblique diameter, when it can readily be understood that serious results must ensue.

Nor should all cases of injury to the child's head be referred to the forceps alone. Cases of facial paralysis and fractures of the bones are reported where no instrument had been employed in cases of contracted pelvis. The existence of these and similar injuries in cases where nature unassisted effected the delivery, after long-continued and powerful efforts, should lead us to hesitate in ascribing them all to the use of the forceps. Their presence, when they do occur after an instrument which does not exert compression has been used, shows that the contraction at the superior strait was most serious, and in these cases the use of the forceps should be regarded as an *experimentum crucis* to see whether a subsequent operation for craniotomy can be evaded.

With regard to the preservation of the synclitism of the head, it may be questioned whether it can exist in even moderate contraction of the brim, the condition most usually demanding instrumental aid, for, on observing the mechanism of unassisted labor in these cases, we find the sagittal suture high up near the promontory, so that the planes of the head of the child can scarcely correspond to the pelvic planes. Did, however, such a relation exist, it can scarcely be influenced by the application of the forceps in the oblique diameter of the child's head; but by traction efforts exerted in a line at variance with the curve of the pelvic canal, a manipulation which is necessary in these very cases in order to lead the head into the pelvis in "the curve of the false promontory," as Barnes terms it.

Dr. Jenks further stated that he had repeatedly spoken of slight contractions of the pelvis as necessitating the use of the forceps; and so in fact they do, the proximate cause which leads to the application of the instrument is, however, often alone recognized by the practitioner. Since the publication of the admirable work of Michaelis on "The Contracted Pelvis," attention has been more and more directed to the fact that in a vast number of cases it is the existence of contraction, more or less marked, which produces disturbances in the normal mechanism of labor, finding their expression in irregularities of presentation and position, delayed dilatation of the os, and rupture of the membranes, prolapse of the cord, wedging and serous infiltration of the anterior lip of the uterus, arrest of the occiput in descent, and secondary uterine inertia. All these conditions are usually due to more or less contraction in the antero-posterior diameter of the brim, and their existence should always suggest a careful exploration of the diameters of the pelvis.

Dr. A. H. Smith believed that the forceps are as valuable as compressors as tractors. He thought that compression is as necessary as traction. He endorsed Dr. Wm. Goodell's remarks in full, and asked why the forceps, if not intended for the sides of the head, are not made with different-sized blades, and with different length of handles. He had seen many cases where a slight deviation in the position of the forceps had caused paralysis of the facial nerve.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF EDINBURGH. *

SESSION XXXI.—MEETING VIII.

Wednesday, 13th March, 1872.—PROF. SIMPSON, Vice-President, in the Chair.

Prof. Simpson exhibited a five and a half months' fœtus, that had been thrown off by a patient laboring under a severe attack of small-pox. The pustules were distinctly seen all over the fœtus, especially on its back. With regard to the time a dead fœtus is retained *in utero*, Prof. Simpson stated that three weeks generally suffices for expelling it; the membranes and placenta first undergo a fatty degeneration, and then they act as a foreign body, exciting uterine contractions.

Prof. Simpson showed a fœtus with three legs, resembling the impression on an Isle of Man penny. Attached to the placenta was a small piece of a second cord.

Dr. Young stated that a little more than a year ago he showed the Society an umbilical cord which was only ten inches in length. He had attended the same patient a few days since during her second confinement, and this time the cord was eleven inches long.

Dr. Pattison mentioned a case of severe hæmorrhage that had lately occurred in his practice. He was sent for suddenly to attend a lady, whom he found to be losing an enormous quantity of blood. On examining her he could not detect blood coming from the os uteri. She had only been married three days, and it was not her menstrual period. The hæmorrhage was arrested by full doses of the pernitrate of iron and the application of cold to the vulvæ.

CASE OF PELVIC CELLULITIS FOLLOWED BY PERITONITIS.

BY DR. JAMES YOUNG.

In the following case, some remarkable changes occurred during the progress of, and subsequent to, the primary inflammatory action which ultimately caused the patient's death. Many, I presume, will allow that one of the most troublesome obstetrical accidents which are apt to occur is miscarriage, and also that hæmorrhage is frequently a cause of most anxious care and solicitude. One of the most dangerous consequences of such an accident is inflammation, which frequently occurs, and which, in this case, proved the cause of the patient's death. The patient is generally found suffering from hæmorrhage, with the placenta left in the uterus. Mrs.——, æt. 32, was born in Edinburgh, of healthy parents, who lived to an advanced age. She had had six children and several miscarriages during her married life of fifteen years. Mrs. —— was greatly alarmed by fire on the 20th of November last, when ten weeks pregnant. Hæmorrhage came on, and continued three weeks, more or less, until the 8th of December, when the fœtus was expelled. A medical man was sent for, and attended for a week, after which a change was recommended to the country. While there, considerable hæmorrhage continued for two weeks, requiring tonics and the liberal administration of wine. Notwithstanding the treatment and rest, the hæmorrhage continued until she returned to town, on the 2d of January last. I saw her on the 3d, and found her very weak, pale, and anæmic. I examined the uterus, and thought there were indications of some placental remnant, which was expelled during the night. The hæmorrhage ceased on the 5th of January. She had little, if any, pain until the 7th, when she had a severe rigor—pulse 120, and weak, with diarrhœa. She complained of severe pain in the region of the uterus. Some days thereafter, Prof. Simpson visited her, and confirmed my opinion that the case was one of pelvic cellulitis. A blister was applied above Poupart's ligament, on the right side, and occasional mild purgatives were given; also milk, beef-tea, and moderate doses of brandy. On the 12th, the pain was very great, and, on examination, I discovered an abscess of considerable size forming between the uterus and rectum. I ordered warm water injections and sponge-peline fomentations over the pubic region, hoping that the abscess might discharge itself per rectum or per vaginam. On the 15th, I opened it with the trocar and canula, and removed a saucerful of putrid and most offensive pus. I ordered vaginal injections to be continued, and on the 16th Mrs. —— was greatly relieved, which was indicated by her countenance. On the 17th, her reply to my interrogation was, "Very well." I prescribed iced champagne, with beef-tea, milk, and white of eggs. To my great dismay, she complained of considerable pain over the abdomen on the 19th, and, on examination, I discovered the whole belly to be tympanitic, with tenderness on touch, all over. There had been no fresh rigor, which made the extension of the inflammation all the more unaccountable. Turpentine stupes were immediately ordered to be applied at frequent intervals, with small doses of opium, and a due amount of nourishment. Bowels to be gently relieved. On the 20th, the pulse rose to 130. Hiccough came on, and vomiting, the stomach showing the signs of irritability usual in such cases, and the patient died on the 21st of January.

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* Reprinted from the *Edinburgh Journal,* May, 1872.

I am indebted to my friend Dr. Charles Bell for a copy of his excellent treatise, entitled "Constitution of Woman, as illustrated by Abdominal Cellulitis," and I find, on perusal, that the connection between cellulitis and peritonitis is admirably brought out—see page 24. Dr. Bell, at page 26, says: "It is also a striking characteristic of this disease that it is liable to have sudden and alarming exacerbations, which are attended by an increase of pain and fever, indicating those occasional attacks of peritonitis which, if not attended to, may prove fatal." Dr. Bell also, at page 44, refers to occasional attacks of cellulitis coming on after uterine operations, but at that time had only met with two such cases. I have seen several annoying instances where perimetritis followed the use of sponge-tents and pessaries.

Prof. Simpson recommended that these abscesses be always opened early for fear of their rupturing. The difficulty is to determine whether it is a peritonitic or cellulitic abscess.

CASE OF ACUTE YELLOW ATROPHY OF THE LIVER. BY DR. M'DOUGALL, COLDINGHAM. READ BY PROF. SIMPSON.

Mrs. Wood, aged 30, a strong, muscular woman, the mother of five children, was, on the 5th of September, after an easy natural labor, delivered of a weakly male child. The placenta was united by firm adhesions to the uterus for one-half of its extent; small abscesses were detected scattered over its surface, together with other alterations in its structure, indicating inflammation of its substance. Before her confinement, she complained for upwards of two months of a feeling of languor, disinclination to work, inability to lie on right side, becoming livid in face, loss of appetite, intermittent jaundice, occasional vomiting, costive bowels, and dyspeptic symptoms. These symptoms she attributed to her pregnant condition, and hence did not seek for medical advice. Four days after her confinement, she rose and went about her ordinary household duties, and for a week after felt stronger than she had done for some months.

I ceased attendance on the 12th, and did not see her again until the 25th, when I found her confined to bed, and was very much struck by the extreme pallor of her countenance.

The conjunctivæ were jaundiced, as also the neck, chest, and arms; the lower part of the body was almost entirely free from yellow discoloration. The jaundice was most marked on the right side. The lochial discharge was of a dark venous character, and occasionally excessive. The tongue was moist, furred in centre, red at tip and edges; there was great thirst; pain in epigastric region after food, and feeling of nausea; bowels costive. Pulse 120, small, and weak, but regular; respirations 30, temperature 101°. Skin moist, covered with clammy perspiration; sweating at night, principally confined to the roots of the hair, and most complained of when awakening from sleep. Copious flow of milk, and patient continues to nurse her child. Urine scanty and high-colored, sp. gr. 1025, contained slight trace of albumen, bile pigment, and a few scales of urea; marked loss of flesh.

The physical examination of the chest revealed a condition of incipient phthisis, manifested by increased depression under both clavicles anteriorly; harsh inspiration: prolonged harsh blowing expiration, most distinct under right clavicle posteriorly. Along with the above alterations of the respiratory sounds, slight crepitation was heard at the right apex; cardiac sounds were feeble, with a faint blowing systolic murmur heard at the base.

Abdomen.—The right hypochondriac, epigastric, and one-third of the left hypochondriac regions were occupied by an enlargement, smooth on its surface. and extremely tender on palpation and percussion. The lower border, which extended almost to the umbilicus, slanted upwards, and was intolerant of the slightest pressure. This hepatic enlargement measured 6½ inches vertically in the right mammary line, and was proportionally increased in the axillary and median lines. The *spleen* was also considerably enlarged. To have six leeches applied to the epigastric region, followed by fomentations, and a calomel purge.

26*th*—The leeches having bled freely, she felt considerably relieved, and enjoyed four hours' refreshing sleep. The liver, still enlarged, is slightly more tolerant of manipulation. The bowels were four times moved after the purgative; the stools were light-colored, and were of an insupportably fetid odor. She complained of nausea, and has vomited during the night a large quantity of gray claylike mucous fluid; the jaundice is more distinct; the lower part of the body still continues free; a clammy moisture covers the whole body. The urine passed was found to contain albumen, casts, epithelial cells, bile pigment, blood globules, and, on adding nitric acid, a few crystals of urea; pulse 120; respirations 32; temperature 100° Muriatic acid prescribed.

It is unnecessary to recount her condition day by day; suffice it to say, that she continued without manifesting any new symptom, save progressive weakness, until the 6th October, when the hepatic enlargement was found to measure 7 inches in the mammary line, and distinct fluctuation was discovered over a circumscribed area of 3 inches; the pain over its surface was much more acute, increased not only by examination, but also by swallowing food. Frequent vomiting of dark-brown masses; petechial spots are found scattered over the upper part of the body and right leg; the perspirations continue profuse; the countenance is extremely anxious, indicative of suffering, and of a pale yellowish hue; the jaundice has now extended to the lower part of the body. She complains of severe frontal headache, and shooting pains in the shoulders, hips, and knee-joints; the bowels continue costive; the urine is of a light ale color, depositing a very copious white precipitate, which, examined under the microscope, was found to be composed of oil globules and granular matter, a few tube-casts, and epithelial cells. The tongue dry and furred; pulse 130; temperature 103°; respirations 35. Muriatic acid to be continued, and large doses of quinine; purgatives.

7th Oct.—Passed an extremely restless night; bowels moved; stools dark-colored; vaginal discharge much more abundant, and comes away in gushes when she is moved in bed; the hepatic tenderness continues extreme; the pain is so intense that the least attempt at percussion causes her to cry out (more especially in the middle line to the umbilicus, and from the end of the sternum along the lower border of the ribs). A doughy feeling is discovered on palpation, extending to 2½ inches in the vertical direction, and 3 inches transversely; fluctuation not so distinct; no vomiting, but severe pain and nausea on taking food; perspiration still continues; pulse 108; temperature 100°. A pint and a half of dark smoky urine was passed during the night, which, on cooling, deposited a very abundant sediment, consisting of albumen, blood-cells, epithelial cells, tube-casts, crystals of uric acid, and urate of ammonia. The petechial spots are more diffused over the body. The pulmonary symptoms continue to increase in gravity; moist sounds are discovered under both clavicles, with increased vocal resonance, and dulness on percussion.

11*th.*—For the last four days her condition has varied little; the only additional symptom being a feeling of drowsiness, and occasional delirium; she lies for hours in a dozing state, but does not sleep; can bear percussion of hepatic region somewhat better; the dulness now extends to only 4 inches in the vertical direction; slight expectoration of blood; epistaxis; lips anæmic, with a few hæmorrhagic spots; the breathing is very much labored, and she complains of suffocative sensations coming on at intervals; an incessant tickling cough causes her considerable annoyance; the jaundice is a little more decided, and the hæmorrhagic spots are somewhat more numerous; the pulse has varied in frequency since last report from 98 to 110, it now being 140, and becoming smaller; the temperature since the 7th has not risen above 104°, or been lower than 100°; the urine, light-colored, contains no albumen or urea; it deposits a very copious sediment, so abundant as to render the urine of the consistence of peasoup; two drachms were evaporated, and found, under the microscope, to be almost entirely combined of tyrosine and leucine.

14*th.*—The vomiting of dark-gray, grumous matter has, for the last twenty-four hours, been so frequent that no internal remedies have been administered. The bowels, notwithstanding the use of strong purgatives, have not been moved for three days. She lies on the left side, and dreads the least movement of her body, as it causes the most excruciating pain in the right hypochondriac region. The jaundice has in a great measure passed off, and is replaced by a ghastly pallor. The lips are covered with hæmorrhagic crusts; the petechial spots are scattered over the whole body; both legs are œdematous, and covered with dark-colored bullæ; the skin is bedewed with moisture; night-dress wet with perspiration. She remains for hours in a state of apathy. The hepatic dulness only one and one-half inch in the vertical direction. The urine is sometimes passed unconsciously, is darker colored, and deposits on cooling a greenish-yellow sediment, wholly composed of leucine and tyrosine. Pulse 160, jerking and irregular; respirations 50; temperature 105°.

15*th.*—Semi-comatose; muttering delirium; excruciating pain in back, subject to paroxysmal aggravation. During the severity of the attacks, she is with difficulty confined to bed. Incessant vomiting of tarlike matter; bowels moved, stools of dark color, intermixed with clots of blood; copious epistaxis occurred twice during the night; urine not passed for eighteen hours; a pint and a half was drawn off, of a dark amber color; on standing, a greenish-yellow sediment was thrown down, found to consist of bile pigment, and numerous crystals of leucine and tyrosine. Pulse 170, small, thready, and intermittent; respirations 56, extremely labored; temperature 106°. On percussing the hepatic region, it was impossible to discover any dulness.

16*th*.—Remained unconscious during the greater part of the night, the condition of stupor interrupted by moans and piercing screams; pupils widely dilated, but sensitive to light; convulsive movements set in about 4 A.M., and recurred at regular intervals till 8 A.M.; epistaxis and menorrhagia (so severe as to require the local application of astringents and plugging) set in two hours before death, leaving her completely blanched, with sighing, breathing, small quick pulse (180 was counted); temperature, half an hour before death, reached 109·4°; urine and stools passed involuntarily; the skin moist with perspiration; the whole body was covered with petechial spots; at certain parts a large quantity of blood was extravasated under the integument; the right leg was more œdematous than the left. Died comatose at 9 A.M., death being preceded by severe convulsions. No post-mortem examination was allowed. About six ounces of urine were drawn off after death, and contained bile pigment and crystals of leucine and tyrosine in great abundance.

Although I had not the satisfaction of the corroborative evidence supplied by an autopsy, I think there can be no doubt as to the nature of the disease from which this patient suffered, and under which she ultimately succumbed. The symptoms considered generally diagnostic of acute yellow atrophy were strikingly developed in this case, viz., jaundice, numerous hæmorrhages, hepatic atrophy, and the presence of leucine and tyrosine in the urine. I must confess that, during the preliminary stage of hypertrophy, I was very undecided in my opinion; and, indeed, for some time was quite unable satisfactorily to explain her condition. The stage of hypertrophy was peculiarly puzzling, more especially as in no case of acute yellow atrophy that I have been able to peruse, is it distinctly stated that inflammatory enlargement has been observed to precede the condition of atrophy. The points which, in this case, appear to be deserving of special notice, are the following:

1*st*. *The Prolonged Preliminary Stage*.—It appears likely that the disease had begun two months before confinement.

2*d*. *The Marked Hepatic Enlargement*, measuring at one time fully seven inches in the vertical direction. This enlargement was also attended with very distinct fluctuation, leading at one time to suspect the existence of abscess. It is just possible that hypertrophy may in all cases precede the atrophy, but, in consequence of not being sufficiently early brought under examination, may have eluded detection. Such, I am aware, was the opinion of the late Dr. Bright; and if it is allowable to form an opinion from one case, I feel very much inclined to agree with him. The sequence of events which suggested themselves to my mind as occurring in this case were as follows:—Absorption of poison from within or without—most probably from the diseased placenta—leading to toxæmia, and manifesting itself by typhoid symptoms, the special hepatic, splenic, and renal affections being secondary results. The hepatic changes might be compared to the lungs in pneumonia—condensation and enlargement, softening, rapid absorption.

3*d. Non-detection of Leucine and Tyrosine until Hepatic Atrophy sets in.*—The long continuance of jaundice, together with febrile symptoms, made me suspect acute yellow atrophy, and led me to examine the urine for those substances before symptoms of hepatic atrophy had manifested themselves; but I was unable to discover their existence until the 11th of October, when diminution of hepatic dulness indicated the commencement of atrophy. This circumstance would lead one to conclude that there is some connection between the absorption of the hepatic substance and the formation of leucine and tyrosine.

4*th. The Increase of Febrile Symptoms coincident with the Occurrence of Atrophy.*—The disintegration of the hepatic cellules, and their absorption into the blood, may have been the main cause of the increase of these febrile symptons.

5*th.* The profuse perspirations, which were more abundant towards the close, seem to indicate an effort to get rid of some blood-poison.

Professor Simpson remarked that this disease occurs more frequently in women than in men, and that it especially attacks pregnant women. He had only seen one case of it in a female who was not pregnant, and in that case the symptoms were not well marked. In many cases it is known that the atrophy comes on at once; the preliminary hypertrophy in Dr. M'Dougall's case he considered very peculiar.

Dr. Fraser had had under his care a very interesting case, which was seen on several occasions by the late Sir James Simpson, who diagnosed acute yellow atrophy of the liver. At first, the liver was supposed to be enlarged, and afterward it seemed to get very small. On post-mortem examination, however, the liver was found to be of the normal size, yellow, and very fatty; the duodenum at its upper part was slightly inflamed. The patient was ill for two months, the principal symptoms being diarrhœa and vomiting. Throughout her illness, her tongue remained clean, and her appetite good. There was no jaundice, and the urine did not at any time contain bile.

SESSION XXXI.—MEETING IX.

27th March, 1872.—Mr. Pattison in the Chair.

Prof. Schroder, Erlangen, was admitted as an Honorary Fellow of the Society; and Mr. Borwick Robertson, Lauder, was admitted as an Ordinary Fellow.

A NEW MODE OF TREATING PUERPERAL FEVER.

BY DR. CHARLES BELL.

It is not my intention to enter on a lengthened dissertation on puerperal fever, as it is fully described in many of our works on midwifery, and my object is merely to bring more prominently under the notice of the Society a mode of treatment which I have been induced to recommend, from its successful results in diseases of a similar nature, as well as in the few cases of this disease in which I have had the opportunity of employing it. For, although I have been connected with the Royal Maternity Hospital for many years, only one case of puerperal fever has occurred during the period I was doing duty. I ascribe this immunity from the disease, to the liberal use of the permanganate of potash, both as a lotion and in the form of liniment, in making examination per vaginam, and to a strict attention to ventilation, and to the avoidance of overcrowding the wards. I feel satisfied that there is greater risk to the parturient woman from a close contaminated atmosphere, than from the free admission of pure air into the lying-in chamber. I have therefore always ordered one of the windows of the wards to be kept partially open.

The more we study puerperal fever, the correctness of the opinion entertained by Sennertus and Riverius will appear the more obvious, namely, that it is a blood disease arising from the absorption of a virulent poison into the system, which is communicable from one individual to another, and may also be inhaled from the atmosphere. This circumstance was fully illustrated by M. Peu, in his description of the epidemic fever which appeared in the Hôtel Dieu in 1664, when a great number of women died, in consequence of the number of wounded persons who were accommodated under the lying-in ward. This was the first appearance of the disease in the epidemic form, and it was peculiar in its character, as it was preceded by hæmorrhage, and was attended by numerous internal abscesses. It formed a strong contrast to the next epidemic, which occurred in Paris in 1746, and proved fatal to many women both in the hospital and to those who were delivered in their own houses. According tó Montonu, it "commenced with diarrhœa; the uterus became dry, hard, and painful; it was swollen, and the lochia had not their ordinary course; the women experienced pain in the bowels, particularly in the situation of the broad ligaments; the abdomen was tense; and these symptoms were sometimes joined with pain in the head and cough. On the third and fourth day after delivery, the mammæ became flaccid. On opening the bodies, matter like curdled milk was found on the surface of the intestines; a milky serous fluid in the hypogastrium; a similar fluid was found in the thorax of certain women; and when the lungs were divided they discharged a milky putrid lymph. The stomach, intestines, and uterus appear to have been inflamed.

It may not be uninteresting to refer to the character of the disease as it appeared in the epidemic which occurred in Paris and Lyons in 1750, as illustrating still further the complications which attend the disease, and prove still more its zymotic character. Poteau informs us that the uterus was found enlarged, and its internal surface soft and black, and its parietes were livid and gangrenous.

While puerperal fever may be complicated in the manner just described, it is not a necessary consequence, as, like smallpox in its most fatal form, it runs its course so rapidly in some cases that there is no time to form any local lesion which can be ascertained during life or discovered after death. Dr. Rigby informs us, that in some of the cases which came under his notice in the general lying-in hospital, there was "neither time nor power sufficient to produce either symptom or trace of inflammation, the powers of life having from the commencement sunk under the deadly influence of the disease." He therefore adds, "that of all the diseases to which the lying-in woman is exposed, puerperal fever is the most to be dreaded, and that there is none in which the accoucheur is frequently more helpless."

In a disease of such virulence, it is of the utmost importance that a remedy should be discovered to moderate its severity. I am convinced of its similarity to erysipelas—a circumstance which has been proved, not only by its appearing epidemically along with that disease, as happened in Barnsley in 1808, and in Leeds in 1809, but there are instances on record,* in which puerperal fever has been induced by those attending patients suffering from erysipelas, and then attending women in their confinement; and there have also been instances of puerperal fever patients producing erysipelas in their nurses. I have also observed both diseases existing at the same time in the same individual. I was therefore induced, many years ago, to suggest that the treatment which I had found so beneficial in erysipelas should be adopted in puerperal fever. I had no opportunity, however, of putting it in practice until a comparatively recent period, when I employed it in the only case which came under my care in the Maternity Hospital, and although the case was very severe, and the patient's life was despaired of, it proved successful, and the woman left the hospital in health. I have already reported this case to the Society. The success which attended this case led me to adopt it in another case, which I was requested to see by Professor Simpson, which was considered hopeless, yet the patient left the hospital in perfect health. Through the kindness of Dr. Young, I had an opportunity of employing the treatment in a patient of his, whom I attended in a premature labor. She was seized with puerperal fever soon after her confinement, and I despaired of her recovery, but she was ultimately restored to health, I understand, for I ceased my attendance before she was quite recovered.

The treatment of puerperal fever in former days was of the heroic kind, as the following case illustrated, and I relate it in order to show the contrast to what I recommend.

22*d Nov.*—Mrs. S., aged thirty-four, a thin delicate-looking woman, with a sallow complexion, was delivered of her third child, a girl, after natural and apparently easy labor. The placenta was expelled immediately after the child. The womb continued large, although there was no hæmorrhage.

24*th Nov.*—Apparently going on satisfactorily, and she felt so well that she sat up in bed for some time in the morning, but at 1 P.M. she was seized with rigors, followed by a glow of heat, soon after which violent pain in the region of the uterus, which was still large.

A linseed poultice was applied to the abdomen, and she had the following powder: calomel gr. ii., and antimonial powder gr. v., in gruel.

8 P.M.—Bowels moved twice; pain in the womb so severe that she could not bear the slightest pressure; pulse 120, full

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* **Ramsbotham, p. 596.**

and strong; tongue white and flabby. She was bled to xvi. oz., when she became sick, and vomited some undigested food. The stomach was so irritable that she got no medicine.

25*th Nov.*, 8 A.M.—Has had some sleep, but is still in great pain in the lower part of the abdomen; pulse 120, weak. To have two dozen of leeches, and then the following powder:—℞. Hydrarg. cum creta, gr. iv.; pul. Doveri, gr. x.

2 P.M.—Dr. Rigby ordered the womb to be washed out with tepid water, and that she should have six grains of calomel and four of antimonial powder.

11 P.M.—Has had several hours' sleep, and feels easier, although there is still much tenderness on pressure; pulse 120, full. To have the white saline mixture in the morning until the bowels are moved.

26*th Nov.*—Has perspired freely during the night. Bowels moved several times. Stools dark-colored at first, but they became more natural. The uterus more painful and swollen, and there is slight tympanitis. Great thirst; tongue furred. Pulse 128, sharp and resisting.

Eighteen leeches were applied to the abdomen, and she had eight grains of calomel and four of antimonial powder. A linseed poultice to be continued after the leeches came off.

9 P.M.—Feels easier, and there is less tenderness on pressure. Tongue cleaning round the edge; pulse 132, weak. Bowels moved several times. The womb to be again washed out with tepid water.

27*th Nov.*, 8 A.M.—Complaining of general soreness, but has no pain on pressure, although the womb is large and hard. Bowels moved several times; tongue cleaner. Expression of countenance very anxious. To have the following draught:—℞ Mist. cretæ, ss. oz.; tinct. catechu, dr. j. M. Ft. haustus.

This draught to be repeated after every stool.

2.30 P.M.—Dr. Rigby ordered her to have a soda powder.

4 P.M.—Dr. Lee saw her, and ordered her to have three grains of gray powder, with four of Dover's powder, every four hours, in consequence of her having vomited a quantity of bilious matter.

8 P.M.—Bowels moved twice, and she has again vomited a quantity of bilious matter, and she feels much exhausted; eyes sunk; countenance extremely anxious; tongue loaded with white fur; pulse 130, weak. To have two grains of opium.

10.30 P.M.—No return of vomiting and purging, and feels easier than she has done since her illness. The uterus seems less, and is free from pain; but the abdomen more tympanitic. It was rubbed with lard and a poultice applied, with great comfort. The first joint of her middle finger much swollen and inflamed, and the pain extends to the shoulder. To have laudanum applied.

28th Nov., morning visit.—States that she is quite comfortable, although very weak, and has much pain in the right arm, which is inflamed from the wrist to the elbow on the outside, and there are several dark spots on it.

To have a lotion composed of equal parts of camphorated spirit and ammonia, applied to it, and to take one of the following pills every hour:—℞ Camphor, ext. hyoscyam., āā gr. viij.; opii, gr. iii. M. et divide in pil. iv. To have sago and wine.

She sank rapidly, and died at 2 P.M.

In place of such active treatment as was adopted in the above case, I recommend small doses of calomel and James's powder in proportion of a twelfth of a grain each, along with a grain of white sugar, carefully mixed and given regularly every two hours until the bowels are freely moved; and thirty drops of the muriated tincture of iron every three hours. The vagina to be washed out several times a day with Condy's red fluid and tepid water, and a linseed poultice applied to the abdomen. If this treatment is regularly and fully carried out, and not in the *timid, partial* way which many practitioners do in erysipelas, and then undervalue the treatment, I feel certain it will give the best chance of cure to the patients.

Dr. James Young believed that great benefit was obtained from using calomel in the manner described by Dr. Bell; he had lately suffered from an attack of erysipelas, and been treated with the tincture of the muriate of iron and calomel, in doses of a twelfth of a grain, with the best results. He had never seen head symptoms in puerperal fever, and he looked upon diarrhœa as one of the most serious complications you could have in that disease.

Dr. Ritchie had tried calomel as a purgative, in the Children's Hospital, in doses of a twelfth of a grain, but without any effect. He considered it important to distinguish the special character of the fever; in a fever of the typhoid type he would not be inclined to use the tincture of the muriate of iron.

Dr. Bell regarded puerperal fever as a disease *sui generis*, and that you may have complications occurring in it as in any other disease. The tincture of the muriate of iron, he believed, lowered both the pulse and the temperature. The efficacy of the powder depends greatly on the manner in which it is compounded, and the regularity with which it is given. When these have been properly attended to, he has never found it fail to move the bowels, and to diminish fever; but if they are neglected it is not surprising that it should cause disappointment.

CASE OF ACUTE INVERSION OF THE UTERUS.

BY DR. KIRK DUNCANSON.

Mrs. B., primipara, aged 23, of nervo-sanguineous temperament, was seized with spurious labor-pains on the morning of Wednesday. These pains continued more or less up to Friday night, when, as there was no dilatation of the os, a strong dose of bromide of potassium with chloral hydrate was given; to be repeated in two hours. The patient did not sleep, but the lips of the os uteri could be easily dilated to the size of half-a-crown on the Saturday morning. The waters had been dribbling away, during the intervals from pain, through the night. The head was felt presenting in the first position of Naegele high up at the brim of the pelvis. The passages were moist, cool, and roomy. The patient preferred moving about the room to lying in bed. At six o'clock in the evening, the patient, owing to her restlessness during the pains, was given chloroform. She was as restless without the anæsthetic as with it, unless when given in enormous quantities, producing profound anæsthesia and cessation of the pains. At five minutes to twelve o'clock, by inserting the fingers of the left hand into the rectum the head was tilted out of the external outlet. The cord was felt round the neck, but was relieved as the head escaped. As the shoulders and body were passing through the outlet, the patient, who was with difficulty kept in the recumbent lateral posture, suddenly flung herself round upon her abdomen, at the same time throwing her arms round an extra attendant at the other side of the bed. Immediately after the birth of the child the patient made a strong expulsive effort as if bearing down during a pain. The child was asphyxiated; the face and head livid. Restorative means were used, and the pulsations in the cord were feeble before ligatures were applied, and the child, a boy, separated. In the meantime the mother was lying upon the extra attendant, perfectly conscious; asked if the child was a boy or a girl, etc. After handing the child to the nurse, on going round to the left side of the bed, the patient's pulse was felt to be good. She felt perfectly well. She was assisted round upon her left side, and back to the other side of the bed, her head being kept as low as possible. On feeling the cord close to the vulvæ the bifurcation of the vessels was felt. The placenta was supposed to be lying in the vagina. To see that the uterus was properly contracted whilst the placenta was being removed with the right hand, the left was placed on the abdomen where the uterus is generally felt like a fœtal head. The appearance of the fœtal head was not felt, but a depression with two lateral prominences. In the meantime the placenta had been easily withdrawn with the right hand and disposed of; the fingers were inserted into the vagina to feel for and remove clots, when immediately within the vulvæ a large, firm, round body was felt. The absence of the uterus from its usual place, and this strange body in the vagina, was very like inversion of the uterus, but there was no collapse, and the hæmorrhage, if any, was very slight. The complete inversion of the uterus, on further examination, could not be mistaken; the large globular mass pretty firm, and the cervix distinctly felt, but the fingers could in no direction upwards escape from the vagina. The patient had a glass of whiskey given her. The relatives were informed that there was something unusual—something I had never seen before; and although the patient looked quite well at present, the sooner Dr. Keiller was sent for the better. Dr. Keiller was immediately sent for. My anxiety led me to attempt the reduction of the inverted uterus. Placing the patient upon her back, I pressed upon the fundus, with the points together of the fingers of my right hand. The patient, screaming, withdrew herself; so the attempt to push up the fundus in this way was given up. On the patient's looking drowsy, and the hæmorrhage increasing, another attempt at reduction was made. The patient was again at the left side of the bed. This time the left hand, with the back of hand and arm well larded, seized the inverted uterus within the vagina, as one would seize the bag of Lister's carbolic spray-producer with the left hand, then gradually pressing upwards as a whole, and compressing the fundus most firmly with the little finger and the third finger. When the vagina was enormously stretched upwards, the fundus was felt gently yielding; the thumb was pressed against it; the other pressure being still kept up, the uterus replaced itself suddenly. The uterus felt softer, and was more covered with clots when the second attempt was made than it did at the first. The cervix was also more relaxed, and the patient's struggles and attempts at withdrawal were more feeble than when the right hand was inserted as a cone. Feeling the uterus returned to its normal position, I withdrew my left hand, and, Dr. Keiller arriving just then, the clots, which were felt like cords hanging from the uterine sinuses, were left. Dr. Keiller, who was very soon in the house after receiving the message, on examining the patient, found the fundus still a little depressed. I had not followed it up with my fingers. Dr. Keiller speedily put the uterus all right, and it could soon be felt like a fœtal head in its proper place. Collapse was now complete. Stimulants were given, hot bottles were applied to the feet and legs, etc. The patient remained in this state for two hours. She was able to swallow. About three o'clock in the morning she began to stare wildly round her, ask for her baby, where had she been, etc. She was told to be very quiet, and was given some ergot with brandy. Shortly after this, violent retching and vomiting set in; nothing would remain, not even brandy, on her stomach. All the vomited matter smelt strongly of chloroform. After the vomiting had ceased for some time, now about five o'clock in the morning, the patient took a small piece of water-biscuit made as breadberry, with brandy; shortly after this she took a drink of ginger-beer, with a small piece of plain water-biscuit. From five to seven she had short intervals of sleep, taking some nourishment when she awoke. I left her about half-past seven, but had not been long home when I was suddenly recalled by a message stating that the patient was worse than she had ever been. On reaching the patient I found her no worse than when I left her, but still restless. She got one grain of opium, and was told to lie quiet and sleep. Her pulse then was 108 beats per minute. She was seen frequently during the day. Her pulse improved in strength, and rose to 120 beats per minute at night. The pulse was 120 on the Monday morning, and rose to 130 in the evening. Tuesday morning it was 120, and the temperature 101° F.; the evening temperature rose to 103° F., with a pulse of 130. On the Wednesday morning the temperature was 101°; pulse 120. The temperature and pulse gradually fell to the normal after this. She had her bed changed on the Tuesday, and was able to be out of bed on the Tuesday following, ten days after delivery.

The causes of the inversion in this case may have been: 1*st*, The uncontrollable restlessness of the patient; 2*d*, The saturation with chloroform of the patient's system—she had fully three and a half ounces in less than six hours. (1.) The restlessness of the patient caused her to walk about the room when there was no need of it; and loss of sleep on the Wednesday and Thursday nights. (2.) The chloroform saturated the patient's system, and destroyed the tonicity of the uterus. These may be the predisposing causes. The immediate causes may either be the patient's striking her abdomen, and thus the fundus of the uterus, upon the attendant or bed; or the shortness of the cord, and its dragging round the neck of fœtus. (The cord was not more than 14 inches in length.) Either of these separately, or both combined, may have caused a depression of the fundus. This depression of the fundus caused the patient to use the strong expulsive effort which occurred immediately after the birth of the child, and made a complete inversion of the uterus. The inversion was acute, as the reduction was completed in less than one hour after it was diagnosed; and in less than an hour and a half from the birth of the child, or the occurrence of the inversion of the uterus, it was returned to its proper situation.

QUARTERLY REPORT ON OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

The Treatment of Inertia of the Uterus. By Lawson Tait, F.R.C.S. Ed. & Eng., Surgeon to the Birmingham Lying-in Charity and to the Hospital for Women. (*British Med. Jour.*, June, 1872.)

A sentence in Dr. Playfair's introductory lecture leads me to believe that a note on a very simple method of assisting labors which are tedious in the second stage that I have recently adopted may not be unacceptable. The method is far too simple for any expectations of mine to be fulfilled that I have been the first to use it, though I am perfectly certain that it is original in my own practice. As it was, however, actually based on Dr. Braxton Hicks's method of external version, and suggested itself to me when I was performing that operation in a case of placental presentation, it may possibly prove to be, like Dr. Hicks's device, from its very simplicity, something new in obstetrics.

Dr. Playfair writes: "We have learnt, also, some valuable lessons from a careful examination of the abdomen externally, such as the possibility of aiding the force of feeble and ineffective pains by judiciously applied pressure to the uterus. In this plan, indeed, which is as yet little known in this country, I feel convinced we have a means of assisting the progress of a labor in which the delay is simply due to the want of sufficient uterine contraction, far safer both to the mother and the child, and far more effective than the administration of oxytocic drugs, such as the ergot of rye, in which many place much confidence."

The fact that this is the only reference I have yet seen to the employment of external pressure in cases of inertia of the uterus must be my apology for describing the method in which I employed it, and, first of all, the case in which it was suggested to me.

In August last, I was summoned hurriedly one morning to see a woman in labor and attended by a midwife. I found her cold, pulseless, and the bed and floor swimming with blood. It scarce needed an examination to know that the placenta was presenting. The os readily admitted my hand, and, the uterus being perfectly flaccid, I at once removed the placenta, and, by the combined version, easily brought down both feet. I could get no amount of manipulation to induce contraction of the uterus; and to wait for the action of ergot was to waste time. I therefore passed my left arm under the patient, and my right arm over her, embraced the uterus between them in a direction parallel with the axis of the brim, interlocking my fingers and spreading them over as large a part of the fundus as possible. In this position, and by the external pressure, I imitated normal contractions, as one does with the forceps, and soon had the satisfaction of finding the child extruded as far as the shoulders; then, with the left hand on the fundus, and the right guiding the child, birth was soon completed. The child was almost dead, of course; but the mother made a good recovery.

Since this case, I have had on three occasions to adopt the method of external pressure in cases of inertia.

Mrs. K——, confined on December 20th, of her seventh child, had a large, roomy pelvis; but though the passages were relaxed to the fullest, and ergot administered twice, the uterus was absolutely passive. I placed her at once under chloroform, and commenced the intermittent pressure described above. In about ten minutes delivery was completed, and there was no *post-partum* hæmorrhage.

In September, I was retained to attend Mrs. E——, the mother of seven children. Her attendant informed me that nearly all her labors had to be assisted by the forceps on account of an inert state of the uterus, and that in the last two she had nearly lost her life from *post-partum* hæmorrhage. A few days before her confinement, the house was entered during the night by burglars, and she awoke to see one of them removing her husband's watch from the toilet-table. She was, of course, much excited, and in the morning I was asked to see her. We feared very much that the fright would exercise an unfortunate influence, and so, indeed, it proved, for symptoms of labor came on immediately. We tried by opium and rest to delay it, and succeeded for a time. At last, however, it came on, and, as before, the second stage was characterized by inertia. The pains were sufficiently severe to require anæsthesia, but, whether it was continued or not, they did nothing. Instead of resorting to the forceps, as I originally intended, I employed the external pressure, and very soon had the head on the perinæum. I then used the forceps to guide the head through the passages, still having the external pressure kept up. She recovered more rapidly and more completely than she had ever done, according to her own account, though she attributed this to the chloroform. It is certain that she had no after-hæmorrhage.

The third case was in the person of a strongly built woman, in whose second labor the pains suddenly ceased without apparent cause. The head was nearly on the perinæum when I arrived to assist the midwife. I advised the external pressure instead of ergot, and we found it perfectly successful in re-establishing the pains, and by its help labor was completed.

I feel convinced from even this short experience, like Dr. Playfair, that the method of external pressure will soon and in most cases supersede all uterine stimulants, and that the use of these will now be confined to the *post-partum* state. External pressure is of great help when, from accident or necessity, anæsthesia has been pushed so as to interfere with the intensity of uterine action. I have little doubt that this communication will bring many others from obstetricians who have practised the same or similar method of external pressure. My plea is that, so far as I know, it is not used in this country as it ought to be, and that ergot is far too largely consumed by parturient women, especially when under the care of the so-called "trained midwives."

[Since correcting the proof of this note, I have seen a reference to a method of assisting the inert uterus by external pressure in Dr. Meadows's *Manual*, with allusions to the writings of Ritzen, Kristeller, and Playfair, but I have as yet had no opportunity of going further into the history of this method of treatment. It would seem to be not of older date than 1856.]

CASE OF IMBEDDED UTERINE FIBROID. By JAMES WHITEFORD, B.A., M.D., Greenock. (*Glasgow Med. Jour.*, May, 1872.)

It is hoped that an account of the following case may be interesting as illustrative of the plan proposed by Dr. Matthews Duncan for the treatment of imbedded uterine fibroid tumors (see *Edinburgh Medical Journal*, for February, 1867), and of which I published a case in the same journal in February, 1870.

The history of this case, moreover, is somewhat remarkable, from the long period of time over which the patient suffered from the hæmorrhage caused by the presence of the tumor, which, nevertheless, showed no signs of undergoing self-enucleation—a period passing even that reported by the physician, St. Luke, of the "woman who had an issue of blood twelve years, and had spent all her living upon physicians, neither could be healed of any."

Mrs. F. F., æt. 46—married for twenty-four years—a native of Greenock, had emigrated with her husband, and was confined of her second child* at seven months, in Rock County, Wisconsin, U. S., in April, 1850. Six months after this event she returned to Greenock, where she has since continued to reside. She states that since that confinement she has never dried up. During the voyage back she was soaking in blood the whole time, and she never expected to reach home alive, such was her prostration. For ten years afterwards she was almost continuously confined to bed, and frequently fainted on attempting to get up. About a year after her return—during which time she had been under treatment—the existence of some tumor was suspected to be the cause of the bleeding, and she was therefore recommended by the late Dr. Mackie to see the late Professor Simpson, but she never went, as, indeed, it was almost impossible for her to be moved. Cold sitz baths, and injections of cold water, gallic acid, ergot, and other hæmostatics were assiduously employed to check the hæmorrhage, but all to no purpose. From the constancy of the discharge during all those years, she could not tell when a monthly period came; but it occasionally increased to an alarming extent (probably thus marking the regular menstrual period), and frequently on these occasions she was believed to be dead, as no pulse could be felt at the wrist, and the heart's impulse alone enabled those beside her to know that she still lived. About seven or eight years ago, she began to suffer from severe pain in the left breast, for the relief of which she took laudanum, and this she continued afterwards to use, frequently to the extent of an ounce and a half daily. It is singular that, although the constant dribbling continued, still it was notably less; nor were the severe hæmorrhages ever so alarming as before she began to use laudanum.

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*Her first child, a daughter, is still alive—was born after a natural labor.

In April, last year, she first came under my notice, and an examination of the womb at once revealed the presence of a small vascular polypus, projecting from the os. At the same time, the body of the organ felt heavier and larger, and the cervix was soft and natural. The removal of the small polypus was not followed by any diminution of the discharge, which consisted of thin, watery blood. In June, I dilated the os uteri, by incising freely the cervix with a pair of scissors on both sides, and afterwards introducing as large a sponge-tent as could be got in. On exploring the cavity, which was more readily effected by pulling the uterus well down by means of a vulsella applied to the lip, a tolerably large smooth projection could be felt occupying the whole of the fundus, and not approaching the cervix. A free incision was at once made across this, about two inches in length—as nearly as I could judge—and another similar incision at an angle to this, by means of a straight bistoury, guarded with lint to within half an inch of the point. A solution of perchloride of iron was at once injected, and a plug of lint, soaked in the same, was introduced up to the cervix, until the following morning. This put an end to the bleeding, which was not very considerable. A smart attack of metritis followed this operation, and I was obliged to allow her to resume the use of the laudanum, which I had stopped from the commencement of my attendance upon her. In a few days the irritation subsided, and a fœtid watery discharge began, but no further bleeding was experienced from that day. The fœtor of the discharge was corrected almost entirely in three weeks, and her condition greatly improved, so that I ceased to visit her in July, requesting her to let me know if any further bleeding should occur. The watery discharge continued to a slight extent, but nothing occurred to mark the presence of the tumor until the beginning of December, when regular labor pains came on (but without further discharge than the serous oozing), and the patient herself states that these were more severe than in either of her actual labors. After suffering these on her knees all day—during which she did not send for me—something like a round smooth ball was felt to be in the vagina, and the patient herself pulled it away. This proved to be a flattened ovoidal mass, about three or four inches long, by about one inch in thickness.* In about three weeks after this a similar labor brought away another tumor, rather larger than the former, but very like it. Only a very little blood was lost after the former of these, and none at all after the second. The patient, after washing the tumors and keeping them rolled up for me, finding that they had begun to smell by the time she thought it safe to venture out, then threw them into the fire. The serous discharge dried up in less than a week; and, exactly one month after the second tumor came away, a regular menstrual period came on, which lasted three days. She has since found the menstrual function quite natural; and her general health is quite restored.

THE VOMITING OF PREGNANCY. By ÆNEAS MUNRO, M.D., C.M., F.F.P.S.G. (*Glasgow Med. Jour.*, August, 1872.)

The vomiting of pregnancy is a reflex symptomatic act, not dependent on lesion of the stomach or any part of the alimentary canal—not an idiopathic affection, properly speaking—but similar to that kind of vomiting which occurs in the course of disease of the kidneys, in phthisis, in disease of the brain, or from the presence of tumors in various parts of the body.

Its frequent occurrence in the first three months of pregnancy has marked it as a typical sign of that condition, and for this reason it is usually very valuable. But if there exists any doubt about whether we have to do with a case of pregnancy or not, no matter from what cause, there is no absolute reliable symptom on which we can depend during the first three or four months of utero-gestation, at which time the sickness usually ceases, and then we have absolute physical signs to guide us to a satisfactory diagnosis.

The "sickness" may amount to nausea, or proceed to retching and complete ejection of the food, and what is vomited varies according to the time when it takes place, and the severity of the attack. It usually comes on more or less rapidly just on assuming the erect position in the morning, and has, in consequence, been termed "morning sickness." It will be useful to consider it both in relation to:

1. The exciting causes—either manifest or presumed; and,
2. The pathological condition induced.

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*The description of the tumors I got from the patient, who naturally examined them with interest as well as satisfaction.

In order to do away with the necessity of making numerous and long quotations, I at once classify what English authors have regarded as the etiology of this affection.

I. "Sympathy" with the uterus (*Denman, Burns, Montgomery, Dewees, Rigby, Meigs, Lee, etc.*)

II. Congestive inflammation and great tenderness of the os and cervix uteri in the latter months.—(*Clay.*)

III. Some irritable condition of the cervix uteri.—(*Churchill.*)

IV. Ulceration of the cervix uteri.—(*Bennet.*)

V. Morbid irritation of the uterus, and inflammation of the deciduous membrane.—(*Dance.*)

VI. Distension and evolution of the uterine fibre, or pelvic irritation.—(*T. Smith.*)

VII. Displacements and flexions of the uterus.—(*Tanner, Hewitt.*)

By glancing over this list, it will be evident how very various the causation is supposed to be; and, although they have severally advocated their own theory more or less exclusively, it may be said that not one of these causes can account for the phenomenon in question. The fact is that obstetricians have not bestowed that amount of attention on the subject which it deserves; for, with the exception of what has been written by Dr. Smith and Dr. Hewitt, we have literally no satisfactory data to go upon. Their remarks, in an especial manner, demand our careful consideration.

That there is an intimate sympathy between the uterus and stomach in pregnancy will be generally admitted, for it is the first and usually the chief source of disturbance; but what we have to do is to try and find out wherein consists the connection. The majority of writers mean by "sympathy" some "vital" inexplicable cause, some accompaniment *necessary* for the natural completion of the function of reproduction. We thus find Dr. Bedford writing: "I believe it is as much a *necessary* result of impregnation as is the enlargement of the mammæ, or the secretion of milk. It occasionally happens," he adds, "though an exception to a very general rule, that some women become impregnated, and are neither nauseated nor do they vomit; and what is perfectly in accordance with my observation is that *such* women are very apt to miscarry." Dr. Ramsbotham writes very much in the same strain, for he says "that, when vomiting is entirely absent, utero-gestation does not proceed with its usual regularity and activity." Dr. Bedford accordingly has recourse to ipecacuanha to produce nausea, for he says it is "to assist *nature,* and relieve the uterus from the effects of extreme congestion." Likewise, we find Dr. Denman stating that the vomiting of pregnancy does good "by exciting a more vigorous action of the uterus, by bringing the stomach into a better state."

It is necessary here to direct special attention to this view of the subject, for, throughout the principal writings on midwifery, the idea of a necessary sympathetic connection between the stomach and uterus is accepted as a sufficient explanation. Such a conclusion would throw no light on the pathology of this affection, nor tend to advance its rational treatment.

In testifying that sickness is not at all *necessary* for the natural function of reproduction, and that the latter can be perfectly performed quite independent of the former, many can agree with the remarks of Dr. Montgomery: "I have seen," he observes, in dissenting from the opinion of Dr. Ramsbotham already quoted, "so many instances in which females have been altogether exempt from this affection in several successive pregnancies, through which they have passed most favorably, and gave birth to strong and healthy children." Then, we know, besides, that there are a great many who enjoy even *better* health during gestation, and never feel sick. Surely from all this, vomiting cannot be *necessary* under the circumstances, and the treatment recommended by Dr. Bedford may with fairness be considered doubtful.

Moreover, we can scarcely imagine how the kind of reasoning advanced in support of this view is likely to meet symptomatic vomiting of an excessive nature, when it arises in the course of any other affection. It seems inexplicable, on *a priori* grounds, how such a condition in the human female (for we do not find any trace of it in the lower animals) can be considered necessary.*

Undoubtedly, the peculiarity we have to deal with here is that, while the function which originates the sickness is being performed quite well in all respects so far as is known, we should have this morbid condition, and that, by checking and stopping the latter, the former would be impaired or perhaps instantaneously stopped.

Dr. Barnes says that "growth that kept pace with the growth of the contents of the uterus did not cause vomiting." If this is the case, it seems strange that we should deliberately allow nature to prevent the pregnant woman from taking, during the first three months of gestation, the same amount of nourishment which she was accustomed to. There is all the more need surely that the usual sustenance ought to be maintained, seeing that now two lives are more or less dependent upon it.

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* The question of whether vomiting is useful in pregnancy is different from whether it is necessary or not, and it has not been entered into here. It may just be possible that, when the system is in that state whereby it responds to the irritation produced by conception, it may then be best adapted for completing the function of reproduction.

That this condition depends on irritation, ulceration, congestion, inflammation, or suppuration, has been successively advocated from time to time, and we admit that either of these, when present, may give rise to it; but we pass these, believing that it is improbable that they do generally originate the obstinate vomiting of pregnancy. Sickness is often present when neither of these states exists, and *vice versa.*

Now, with regard to distension and evolution of the uterine fibres as an explanation of the vomiting. This view seems a likely one, in consequence of the necessity for such development, and the constancy of the symptom, on the one hand, while on the other it has been sometimes observed that the patient did not get on so well when there was no sickness, and that, therefore, there was some abnormal condition of the uterus.

However plausible this theory may appear to be at first sight, yet there are many facts which have to be explained before it can be accepted.

(*a*) How is it that, during the latter months of utero-gestation, when the distension and evolution of the uterine fibres are necessarily more extreme, there is little vomiting? (*b*) How do many women get through the whole period of gestation without being sick? (*c*) How can this theory explain sickness which at one time puts the life of the woman, when about the third month of pregnancy, in great danger, while in the same individual six months afterwards, and under similar circumstances, there is scarcely any sickness, and yet the distension and evolution are necessarily much the same in both? (*d*) If Dr. Barnes is right in supposing that the vomiting is due to "the distending contents outrunning the accommodating growth of the uterus," *i.e.*, unequal development, then it cannot be said to depend on the distension and evolution of the fibres in the same sense as Dr. Smith means it.

In the work of the late Dr. Tanner on "The Signs and Diseases of Pregnancy," it is mentioned that displacements may be one of the causes of excessive vomiting. Dr. Barnes says the same cause has been long ago advocated by Moreau, Mayer, and Ulrich.

But Dr. Hewitt, while advocating this opinion, differs from them in attributing the sickness of pregnancy exclusively to flexion of the uterus, the severity of the one being in proportion to the degree of the other.

The case to be afterwards described, in a very remarkable manner bears out to a certain extent what Dr. Hewitt has said on the matter; but it would be premature to accept the doctrine that flexion of the uterus in this extended sense is the cause of the sickness. In support of this, we may refer to the 20 cases of death that took place in 13 years of Dubois's practice, and in those whom he examined he could detect no flexion or other cause sufficient to account for death. Again, Dr. Bennet ascribed it to ulceration of the os and cervix, and makes no mention of flexion, nor do any of the others already alluded to. It does not seem, then, that flexions are always present when there is sickness, and many have affirmed that when flexions exist there is no vomiting.

Dr. Hewitt, it appears to me, was led to propose this explanation chiefly in consequence of, first, having to treat sickness occurring in young unmarried women suffering from flexion, and who, after they married, suffered severely from sickness of pregnancy; and second, by observing that the sickness occurred in getting out of bed in the morning. It may be noticed in passing, that both these points may be otherwise explained than having direct reference to the view now propounded by Dr. Hewitt. For, with regard to the first, weakness and great nervous irritability are probably the predisposing causes; and in the second, gravitation exercises its influence, just as the body assumes the erect position in the morning, but not in causing flexion of the uterus.

It must be borne in mind that we have to deal with a hyperæsthesia of all the generative organs, that there is an increased vascular erythism after conception, especially of the inner surface of the uterus, and more particularly at that part where the ovum is attached; the organ accommodating itself to its new function, its becoming larger and more distended, it seems to me that change of position, which Dr. Hewitt correctly supposes, has something to do with its production; but I am inclined to think that gravitation acts on the contents rather than on the containing body. In this way flexion is not produced, but the fluid contents falling on some sensitive part (probably on the anterior portion of the wall), near the cervix which it presses upon, gives rise to the reflex act in question.

When there is little or no sickness, is it not probable that the ovum is attached only in the neighborhood of, or altogether away from, the part that we have supposed, and the same irritation is not produced?

This view is supported, to some extent, by what we know takes place in other conditions of the uterus; thus, for example, when an intra-uterine polypus descends upon, and opens up the os uteri, there are nausea, vomiting, and sometimes rigors excited; the same occurs in the first stage of labor, and occasionally when the menses are retained. This seems to be the most probable physiological explanation of the typical vomiting of pregnancy; but, when it occurs to an excessive degree, there is some morbid condition also present. On what the pathological state depends, we must await further enquiry—it is possible that it may be due to one thing in this person, and to another in that. Dr. Barnes affirms it is due to a double toxæmia. Certainly, when vomiting is excessive this is present, but what physical condition produces this? Undoubtedly, in some cases, flexion, as Dr. Hewitt has observed; in others, suppuration, as Dance has shown; in others, ulceration, according to Dr. Bennet. In the meantime, it will be useful to collect more data on the subject before advancing to further generalizations.

Case of Double Uterus and Vagina, etc. By John Aikman, M.D., Guernsey. (*Glasgow Med. Jour.*, May, 1872.)

The case is one which, as it so happened, was not prejudicial to the patient, viz., the existence of a double uterus and vagina. The patient came under treatment for jaundice, and died suddenly from hæmorrhage into the bowels. At *post-mortem* examination, a cancerous tumor was found, destroying the neck of the gall bladder, and involving the surrounding structures. On continuing the examination, a tumor, nearly the size of an ordinary apple, was found attached to the fundus of the uterus, and on that organ being partially detached, to permit of its more thorough examination, the vagina was found to be double. The whole was therefore removed and submitted to a careful examination.

The patient was about 30 years of age, and was in the last days of menstruation, a small quantity of very light-colored discharge still staining the napkin.

The vagina was divided by a septum rather thicker than its ordinary wall, commencing about ¾ of an inch above the hymen, which was perfectly complete, and inserted above, about midway between the two ora uteri. The canals were of nearly equal size, and were both lined with very perfect mucous membrane. At the upper end of each canal was an os uteri, the cul-de-sacs being hardly perceptible around the cervix. The uterus had the usual shape, with the exception that its anterior and posterior surfaces were more then usually convex. It was fully four inches in length, and its other diameters proportionately increased. On laying open the cavities, they were found of nearly equal size, the right being, if anything, the larger. The left cavity was perfect, as far as the os internum, but beyond this it tapers to end in the left Fallopian tube. The right cavity was perfect, having the usual shape of the right half of the uterine cavity, and communicating freely with the right Fallopian tube. Neither cavity communicates with the Fallopian tube of the opposite side. The mucous membrane of the left cavity was covered with a grayish shreddy structure and opaque mucus, but the membrane itself was firmly adherent, and in no part absent. That of the right was quite unaltered. The left ovary contained a dark-colored granular clot, in which had evidently been a Graafian vesicle. Had impregnation ever taken place, this case would have been one of peculiar interest. A case of impregnation of both cavities of a double uterus is recorded in the *Lancet* of August 5, 1871.

CHLORINE WATER IN THE TREATMENT OF DIPHTHERIA. By W. G. BALFOUR, L.R.C.S.E., Assistant Medical Officer to the Montrose Royal Asylum. (*Edinburgh Med. Jour.*, Dec., 1871.)

Chlorine water is used by many practitioners in the treatment of scarlet fever. In the *Medical Times and Gazette* of the 25th August, 1829, there is a letter by Messrs. Taynton and Wells, stating that they employed chlorine water in cases of scarlet fever, and they "most solemnly declare that it proved successful in almost every case to which they were called in time, and in which the medicine was *faithfully* administered." At page 209 of Watson's *Practice of Physic*, vol. ii. (fourth edition), mention is made of this letter in the *Medical Times and Gazette*; and the good effect of chlorine water is there stated to depend upon its disinfecting properties, probably depriving the secretions from the throat in scarlet fever of their noxious qualities.*

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* To prepare chlorine water, put grs. viii. of potas. chlor. in a strong pint bottle, add ʒ i. of acid hydrochlor. fort.; close the mouth of the bottle whilst the violent action lasts, then add water, ounce by ounce, with constant agitation, till the bottle is full. (An adult may use the whole pint in a day.)

Dr. Matthew Gairdner of Crieff was, as far as I know, the first to use chlorine water in diphtheria, with the best results; and it was while acting as his assistant that I became aware of its good effects.

The following observations are made with the hope that an extended trial of the chlorine solution in diphtheria may establish its value in that disease:—

In a family in the neighborhood of Crieff, four of the children suffered from well-marked diphtheritic sore-throat. In all of them the tonsils and pharynx presented patches of diphtheritic membrane, the submaxillary glands were enlarged, and the urine in two of the cases contained albumen. They were all treated with chlorine water, stimulants, and milk. Three of the children recovered, the fourth died. Dr. Ormond saw the child that died along with me, and confirmed my opinion as to the nature of the disease. I attributed this death to the fact that the mother failed to *faithfully* administer the medicine, assigning afterwards as her reason that it made "the poor thing cry."

The conclusion that the want of the medicine was the cause of the child's death may have been wrong; but seeing those who took it all recovered, and that their symptoms at the beginning were fully as severe as those of the child that died, it is probable.

The following severe case of diphtheria, met with recently, appears strongly to confirm the good effects I formerly obtained in the treatment of this disease by chlorine in solution:—

B. W., a child three years of age, complained one morning of a sore-throat, and on examination there was seen a deposit of false membrane, the size of a threepenny-piece, on the right tonsil. Diphtheria prevailed in the neighborhood, and although there was no proof of contagion, I had strong suspicions that it was a case of diphtheria. A solution of potas. chlor. in water was given. Next day there was a further deposit of false membrane and marked constitutional symptoms.

The breathing was short, gasping, and difficult; the pulse 130 per minute, and the urine albuminous: a teaspoonful vin. ipecac., afforded temporary relief to the breathing; but in three hours after the administration of the emetic, the symptoms again becoming urgent, recourse was had to the chlorine solution in ʒ ii. doses every two hours.

Next day the symptoms were if anything more intense than before, the urine highly albuminous; all solid food was refused; milk and wine in small quantities and the chlorine solution were, however, still taken.

By the evening the child was still breathing in gasps, and evidently fast sinking. Hot fomentations were applied to the throat and chest, more with the object of doing something than from any hope of good resulting. Shortly after the application to the throat the child had a paroxysm of coughing, followed by a profuse expectoration of something, which was swallowed (probably the false membrane, as there was immediate relief to the breathing).

The child steadily improved after this, the chlorine being continued for several days.

A week after convalescence was established, the child choked whilst drinking some water, part of the fluid being ejected through the nostrils. This choking occurred at times for several weeks after convalescence was established, and there was also aphonia.

Other cases of diphtheria, treated in exactly the same way whilst under Dr. Gairdner of Crieff, might be published. The one I have given is in itself so typical, and its termination so satisfactory, that any addition would be superfluous for the purpose in view, viz., that of calling the attention of the profession to the value of chlorine in diphtheria.

The remedial action of chlorine in diphtheria and scarlet fever appears to be more general than local. It cannot exert much influence on the exudations, which are too often in the larynx and trachea, and consequently beyond its reach when the medicine is taken in solution.

Chlorine in solution, when taken internally, is absorbed as chlorine into the blood; in poisonous doses, producing decomposition of the blood-corpuscles and hyperchlorite of soda. If, then, diphtheria be a disease due to toxæmia, it seems highly probable that chlorine, being absorbed into the blood, even in small quantities, can hardly fail to affect the poison present in the system in some way.

The case given seems strongly to support this view, for it will be observed that, before the chlorine was administered, the constitutional and local symptoms were so severe as to lead to a prognosis the reverse of favorable.

There was evidently a large deposit of false membrane in the trachea and larynx, and until this was got rid of by a fit of coughing, death from suffocation was imminent.

There was no fresh deposit of membrane after the coughing, but whether due to the chlorine or not others must judge.

Whatever be the theory of the action of chlorine in cases of diphtheria, I have not found it fail in the treatment of this disease, when faithfully given, since Dr. Gairdner called my attention to it, and I trust others may be induced to try it with equally favorable results.

ON LIENTERIC DIARRHŒA IN CHILDREN. By EUSTACE SMITH, M.D. (*Med. Times and Gazette*, June, 1872.)

A variety of diarrhœa is not uncommon in children, the peculiarity of which consists in the fact that the motions contain little fæcal matter, but are composed almost entirely of undigested food mixed with mucus so as to present a slimy appearance. These motions are passed very shortly after or even during a meal; the food taken appears to pass with extraordinary rapidity along the alimentary canal, and to be voided in almost the same state in which it was swallowed.

The condition which gives rise to this looseness of the bowels is no doubt an unnatural briskness of peristaltic action; the intestines are in a state of great irritability, so that food taken into the stomach is at once forced along the digestive tract with a rapidity which allows little digestion to take place during its passage.

This form of diarrhœa is found in children of from three or four to nine or ten years of age, and gives rise to much emaciation, pallor, languor, and to all the other signs of defective nutrition. At the same time the other consequences of irritable bowels are usually to be noted, and in bad cases night-terrors, nocturnal incontinence of urine, sudden faintness, unusual fretfulness and causeless crying are commonly sources of great anxiety to parents, who attribute them at once to that great bugbear of mothers, "irritation of the brain."

The bowels act three, four, or more times during the course of the day. There is almost always an evacuation in the morning on first rising from bed, and afterwards in the course of the day each meal is at once followed by a like movement of the bowels, the child having often to leave the table hurriedly, and frequently before the repast is actually concluded. Each motion is preceded by griping pains in the belly, and is characterized by excessive urgency, the patient having great difficulty in restraining his desire during the time necessary to enable him to reach the closet. These griping pains are not always followed by a stool, but may come on and go off at irregular times in the course of the day without any result. Sometimes, however, they are accompanied by a desire to go to stool, although no motion is actually passed. The tongue may be a little furred, but is usually clean, and is red at the tip and edges; the redness being due to small crimson papillæ, which are sometimes slightly elevated.

This variety of diarrhœa is not to be controlled by the ordinary astringents, and is very much increased by aperients, as castor-oil. Opium will, however, often check it temporarily; but for its permanent cure the best remedies are arsenic and tincture of nux vomica in small doses. The abnormal activity of peristaltic action to which the derangement is owing appears to be due to impressions of cold; and therefore, that the cure may be permanent, it is advisable to protect the belly by a broad flannel belt, so that the body may not be exposed to sudden chills.

The following short cases will serve as illustrations of this form of diarrhœa, and of the treatment to which it is most readily amenable:

Master R., aged five years, was brought up to me from the country. "For the last twelve months he has been subject to prolonged attacks of diarrhœa, during which the bowels will act four or six times in the day. The motions usually follow a meal, and sometimes so urgently that he is obliged to leave the table before the repast is concluded. The motions are said 'to run from him,' and to contain much slimy matter. There is no straining, but the stools are preceded by some griping pains in the belly. He is fretful and rather thirsty, but sleeps well at night. He is losing flesh rapidly, although his appetite is large." The child was ordered to take three drops of tincture of nux vomica in a draught of citrate of potash three times a day before meals. A few days afterwards he returned very much better. The bowels were acting three times a day, not after meals. His appetite was more easily satisfied, and he had ceased to waste. A change was then made in his medicine to one drop of liq. arsenici chlor. in a nitric acid mixture before each meal, and he was not seen again.

Elizabeth W., aged four years, had suffered for a long time from repeated attacks of diarrhœa, each of which lasted for many weeks together. The motions were said to follow immediately upon taking food, and to occur sometimes in the intervals between the meals, so that the bowels were frequently acted upon five or six times in the day. The stools were slimy, and were passed without straining or apparent discomfort. The child was irritable in temper, and was very restless at night. Her appetite was capricious, and she was very fanciful in her eating. Her skin was exceedingly rough and dry. The tongue was clean, and over the surface were scattered light-red elevated papillæ. She was first seen on January 7, and was ordered to take one drop of liq. arsenicalis in a mixture containing citrate of iron and ammonia, with bicarbonate of soda, three times a day. A warm bath was recommended every night, for the purpose of softening the skin and removing the dry epithelium scales.

On January 14 the girl seemed better in herself, although the bowels were in the same condition as before. She had taken the medicine regularly, but each meal was still followed by the accustomed stool, and the child was still losing flesh. A mixture was then ordered containing laudanum and tincture of nux vomica—two drops of each to be taken before each meal. Considerable improvement followed the change of medicine—the appetite became very good, and the bowels, although still relaxed after each meal, yet did not act in the intervals, so that the daily number of evacuations was much reduced. The skin, owing to the nightly warm bath, had become soft and supple. One drop of liq. arsenici chlor. was then given three times a day in a nitric acid mixture, and the cure was soon complete.

In the following case the lienteric diarrhœa was associated with incontinence of urine:—Emma L., a girl eight years old, who had suffered from rickets during infancy, was brought for advice for an almost constant looseness of the bowels. The stools occurred directly after meals. She also complained of an inability to hold her water for long together, either in the day or night. She was ordered three drops of liq. strychniæ and ten drops of tincture of belladonna three times a day before meals. A few days afterwards she could hold her water very much better, but the bowels were still relaxed after meals, and were as loose as ever. One drop of liq. arsenici chlor. was then given with dilute nitric acid three times a day before meals, and in the course of a week greatly improved the character of the stools, which were more solid and healthy-looking, and were less commonly found to follow a meal, although they were still too frequently passed. The girl was said to be very nervous, and to complain of slight pains in the belly. The mixture was then changed to—℞. Tinct. nucis vomicæ ♏v., liq. arsenicalis ♏j., mist. pot. citrat. ℥ss., three times a day; and the motions soon became perfectly natural both in number and quality.

[*Press of material has crowded out of this number the Reviews and Book Notices. In the November issue this department will be largely represented.*]

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ORIGINAL COMMUNICATIONS.

A BRIEF SKETCH OF THE PATHOLOGY OF AREOLAR HYPERPLASIA AND SCLEROSIS UTERI.

By ALEXANDER J. C. SKENE, M.D.,
Professor of the Diseases of Women and Clinical Obstetrics in the Long Island College Hospital, Brooklyn, N.Y.

(Presented before the New York Obstetrical Society, October 1, 1872.)

During the early part of my practice I accepted the current views on uterine pathology regarding the enlargement of the cervix uteri, which frequently occurs in connection with cervical endo-metritis. That the increase of tissue (as stated in our text-books) was due to inflammatory products, appeared reasonable. But when I came to know that the ultimate products of inflammation are very rarely found in these hyperæmic affections, I was obliged to reject those theories of pathology, and seek some other explanations of the conditions referred to.

In the last edition of Prof. Thomas' work on the diseases of women, he applies the name "*areolar hyperplasia*" to those lesions which were formerly known as *hypertrophy, chronic inflammatory hypertrophy*, etc. I gladly accepted the new application of the term, believing that it more perfectly expresses the true pathology of certain forms of uterine disease than any of the names used heretofore. I believe, however, that the name should be limited to those diseases in which areolar hyperplasia is the principal tissue change present.

As I understand it, areolar hyperplasia, as used by Prof. Thomas, is intended to include those forms of enlargement of the uterine walls, of both body and cervix, which arise from long-continued hyperæmia.

But the question may be raised here as to whether this general term covers all the facts of the case. Accepting the views of Prof. Thomas as an evident advance in the *right direction* in the study of uterine pathology, I nevertheless believe that the term "hyperplasia" should be limited to those diseases in which areolar hyperplasia has occurred from simple hyperæmia, and is the only lesion or tissue change present. If used indiscriminately in cases in which the tissue is increased in quantity, true hypertrophy would be included, as well as proliferation of the connective tissue cells. This would evidently lead to confusion; not only so, but it confounds distinct pathological lesions.

I propose to limit the term "areolar hyperplasia" to those tissue changes in which there is simply *excess of the connective tissue, i.e.*, when the whole increase in the size of the part is due to the excessive growth of that special element of the structure.

Accepting that definition of areolar hyperplasia, it can be easily described ; there is no confusion of terms ; the name at once indicates the lesion.

True areolar hyperplasia occurs as the result of long-continued hyperæmia, and does not, as a rule, extend to the entire uterine walls. It is limited generally, if not invariably, to the *cervix uteri.*

The increase of tissue is found circumscribed, involving one or both lips of the os externum. When both lips are involved, one is usually larger than the other ; occasionally the whole cervix is symmetrically increased in size, but this is the exception to the rule.

With the change in quantity of tissue there is also a change in consistence. The part affected is much denser, and has less elasticity than the normal tissue.

To the touch, and under the knife, it approaches to cartilaginous hardness. The tissue is also anæmic, compared with the normal parts; although the mucous membrane covering the indurated portion may be and usually is highly congested.

The histological composition is as the name implies, —there is excess of the areolar tissue ; and in some cases of long standing, the vessels and other tissue-elements of the structure are atrophied.

Areolar hyperplasia may be readily distinguished from simple swelling of the cervix, which occurs in hyperæmia, by the fact that in the former there is abnormal hardness and anæmia, while in the latter there is hyperæmia and the normal density of the part. The one bleeds easily and freely on being punctured, the other does not.

The condition most likely to be confounded with areolar hyperplasia is the enlargement of the *body* of the uterus, which arises from long-continued hyperæmia.

Although the cause is the same, viz., hyperæmia, still the anatomical lesions resulting therefrom differ according to location.

The body of the uterus undergoes true hypertrophy, and by that I mean that there is a symmetrical and proportional increase of all the normal tissue-elements of the structure. And this condition, it will be observed, differs very essentially from the areolar hyperplasia which occurs in the cervix, and is due to increase of the interstitial tissue alone.

Frequently true hypertrophy of the body of the uterus is found connected with areolar hyperplasia of the cervix, but they are, nevertheless, distinct affections.

Many facts might be given in proof of this position; one very striking one is observed in the *treatment* of such cases. The enlargement of the body will rapidly diminish, while no form of treatment will affect the hyperplasia of the cervix.

Some time ago, I ventured to introduce the term "*Sclerosis*" to designate a certain form of uterine disease which had been formerly known by a variety of names, such as chronic metritis, inflammatory hypertrophy, etc., etc. My objection to the names in use came from the fact that they nearly all indicated a condition of *inflammation;* while, in reality, the affection was a change of structure resulting from some pre-existing disease—changes in structure of the uterus resulting from inflammation. *Sclerosis* was chosen because the term was already familiar, as applied to morbid conditions of other organs similarly affected.

The pathology of sclerosis uteri is characterized by general enlargement and induration of the uterine walls, while the size of the cavity is relatively lessened.

The growth is *con*centric and *ex*centric, as in cases of endometritis. The tissues are increased in quantity, denser in consistence, brittle in quality, and more anæmic than in health.

These peculiarities, it will be observed, resemble the "areolar hyperplasia" of Prof. Thomas, but further study of the causation and minute structure of the parts in sclerosis will show a difference.

To comprehend the nature of the anatomical character of this affection, it is necessary to observe that sclerosis is one of the sequelæ of puerperal metritis. Inflammation of the uterus occurring after parturition partially arrests the process of involution. Exudation takes place into the tissues of the uterine walls, and this favors, after a time at least, the proliferation of the connective tissue cells.

Hence, in sclerosis there is increase of the normal tissue from arrest of involution, and excess of connective tissue deposited from the inflammatory exudation. In other words, this affection is the result or product of puerperal metritis; and it is claimed that those changes in the structure of the uterus arise from this cause alone. Dr. Noeggerath, of New York, states that he has never seen this affection (which he calls chronic metritis) occur as the result of any other cause; and, judging from the cases which have come under my observation, my experience agrees with his.

Finally, sclerosis is a *permanent* lesion. There is no tendency to restoration of the normal tissue; on the contrary, there is a lowered vitality of the part, and consequent tendency to further degeneration. Hence the practical fact that these cases of sclerosis are peculiarly prone to such diseases as epithelioma of the cervix, etc.

This relation of sclerosis, or so-called "chronic metritis," to malignant disease has been doubted, but the subject only exemplifies the general pathological law, to which there is no exception, that whenever the tissues of an organ are changed from their normal type, that change is towards degeneration, decay, and death.

Should it be granted that areolar hyperplasia and sclerosis, as here defined, differ in cause and clinical history, still it may be said, that in their anatomical characters they are very much alike. In the one, areolar hyperplasia is the *only lesion*, while in the other it is a *prominent*, but *not* the *only element* in the *change of structure.*

Hence the question naturally arises as to the necessity of using two terms when the conditions indicated by them are so nearly alike. In answer to this, it may be stated that areolar hyperplasia, as defined by Prof. Thomas, does not cover the whole ground, nor does sclerosis, as I have used it heretofore, include the structural changes of the cervix uteri arising from hyperæmia. Nevertheless, the use of the two terms is objectionable, if one could be made to answer the purpose.

As the term sclerosis is already familiarly applied to hardening of the spinal cord from areolar hyperplasia, I would suggest that the same use should be made of the name in uterine pathology. The arrangement would then stand thus:

Sclerosis of the cervix uteri from areolar hyperplasia, and sclerosis uteri from puerperal metritis.

While writing this I am fully conscious of treading on debated ground, and in place of helping to clear up doubtful points in uterine pathology, I may be making confusion more confused.

But having had opportunity for observation, I have necessarily formed opinions, and one of these I venture to throw into the common stock, knowing that if it is at variance with truth it will soon precipitate. On the other hand, if the statements made harmonize with true pathology, they will naturally fall into the current of accepted views.

CASE OF FÆCAL FISTULA AND OVARIAN CYST IN A CHILD THREE YEARS OLD.

By J. H. POOLEY, M. D., Yonkers, New York.

(Read before the New York Obstetrical Society, Oct. 1st, 1872.)

MAGGIE TURNER, aged three years and two months at the time of her death, was attacked in April, 1871, with an abscess on the side of her neck, probably from suppuration of one of the lymphatic glands, which broke spontaneously, and discharged for some time.

About five months afterward she had an inflammatory swelling in the left iliac fossa, which, after existing about a month, also broke spontaneously, and discharged pus. It continued to discharge until the time when I was called to see her, April 15th, 1872, though latterly the discharge had been but slight. Upon examination I found in the left iliac fossa a swelling, or rather an area of indurated tissue as large as a goose-egg, the integument over which, and for some distance around, was red and irritated; there were two minute openings, about an inch apart; the discharge was thin, and more like mucus than pus. My suspicion was immediately excited that there was intestinal communication. On questioning the mother, she said that the same fear had arisen in her own mind, and she thought she had noticed the discharge of matter from the alimentary canal, such as fruit, seeds, etc., and on one occasion a grain of barley that had been swallowed in some soup.

The child was somewhat pale and emaciated, and there was some enlargement of the abdomen, the character of which was not determined; in fact, to tell the truth, not much attention was paid to it. A director passed easily from one of the openings above mentioned to the other, and I divided the intervening tissue, when the nature of the case became plain. It was, as before supposed, a fæcal fistula, the result of the abscess.

Cooling lotions, with a compress, were applied, and powder of lycopodium to the surrounding integument, to protect it from irritation by the discharge. Two weeks afterward I made an attempt to close the fistula, by paring the edges and bringing them together with silver sutures. This attempt proved a complete failure, the stitches broke out, and left things rather worse than before. The child had all along natural evacuations per anum, but there was a constant discharge of yellow mucus, with a little feculent matter from the unnatural opening. The nature of the discharge, and the evident interference with the child's nutrition, now convinced me that the communication was with the small intestine pretty high up.

Notwithstanding every care the child's health slowly but steadily deteriorated, she emaciated very much, while the abdomen increased in size; this latter fact I was unable satisfactorily to account for. She died on the 14th of June, after a sudden attack of peritonitis, for which no cause was apparent, which lasted only forty-eight-hours.

Post-Mortem.—Body emaciated, belly large. Upon opening the abdominal cavity, it was found occupied by a large cyst, and in the peritoneal cavity, covering the intestines, there was a white curdy fluid. This was found to be the same as that contained in the cyst, which had burst posteriorly. The quantity in the cyst and in the abdominal cavity was estimated at over a quart. There were abundant evidences of peritonitis. Upon investigation the cyst was found to arise from the left ovary or broad ligament. The intestine involved in the fæcal fistula was the upper part of the ilium. The intestine was agglutinated to the wall of the ovarian cyst, and the uterus, cyst, intestine, and portion of integument concerned in the fistula, were all removed together.

Dr. Peaslee being appointed by the New York Obstetrical Society to report on the specimen just described, finds the cyst to be a bilocular ovarian cyst of the left side. The right ovary remained intact, except that it was partially covered by an exudation.

He referred to page 65 of his work on "Ovarian Tumors," for cases of ovarian cysts occurring in infancy and even in the new-born. He also referred to page 354 of the same work, for a case of ovariotomy unsuccessfully performed by M. Alcott of London, on a child three years old, and another successfully performed by Dr. W. B. Barker of Ohio, on a little patient of six years and eight months. Dr. Peaslee had, within the last year, seen a case of ovarian cyst in a child five years old who had been once tapped, and was then refilling.

CASE OF ATRESIA OF THE VAGINA.

By E. H. DAVIS, M.D., Albany, N. Y.

Mrs. K——, the wife of a farmer living in the northern part of Chemung Co., was brought to my office in the city of Elmira by her husband, for advice, on the 7th of October, 1864. She was 32 years of age, full habit, medium height, sanguine nervous temperament, fair complexion, blue eyes, and dark brown hair. Her bust was full and broad, but the mammary glands were only moderately developed. Her movements were nervous and though her voice, manner, and general development were observably masculine, yet her appearance was that of a pleasing, vivacious, and vigorous woman.

Her husband seemed greatly attached to her, and she represented him as being very forbearing and considerate of the unfortunate physical condition in which he had found her.

They informed me that they had been married for seven years, but had never been able to consummate their connubial rites, owing to some obstruction on her part, which they at first supposed in time would be overcome. This hope, combined with extreme delicacy in letting their embarrassment be known, had deterred them from before applying for that relief which they now sought to obtain.

She was subject to frequent headaches and dizziness, which she supposed, and had been told by her physician, was caused by her not having her monthly flow, or catamenia like other women, and for which she had often taken medicine without any benefit. I learned from her, on inquiry, that when about fourteen years of age she became quite sick, and suffered so much from pain in the back and through the pelvis, that the physician who attended her made an examination, and, as she said, punctured her with a lancet, which was followed by a little dark thick blood. Since that time she had at irregular and sometimes distant periods suffered similar pain, but without discharge, except occasionally. By leaning heavily across a chair, or by introducing two fingers within the passage, she was sometimes able to force out a few drops of thick tarry blood, which was generally followed by great relief. At my request she consented to an inspection and careful examination of the parts.

The mons veneris and labia were natural, and well covered with hair, and on separating the labia the nymphæ clitoris and meatus urinarius were in every respect normal in appearance. I introduced a bivalve speculum into the vulva and forcibly separated the parts, which at once brought into view a complete occlusion of the vagina immediately posterior to the meatus urinarius, the surface of which presented the same appearance as the rest of the mucous membrane lining the vulva. I could not at this time discover the least opening, though I sought carefully for it with a small probe.

By introducing a sound into the bladder, and pressing firmly against it with the fingers in the natural direction of the vagina, there was no freedom of motion, but the parts seemed firmly adherent, and imparted a strong and fleshy feeling to the touch, indicating that the obstruction might be more than a merely thickened and imperforate hymen.

On her assuring me that she was willing to submit to any operation that would promise her relief, I requested her husband to bring her to my office again the following Thursday for further examination, and to ask in Drs. E. L. Hart and H. S. Chubbuck, to examine her with me,—both gentlemen of long and large experience.

In further conversation with her at this time, and in answer to my questions, she told me that from any emotion she had ever experienced she did not know the feeling of sexual desire, and no sensation in the attempts at coitus with her husband but that of pain or discomfort.

On the 13th of October I again examined her at my office, in company with the medical gentlemen before mentioned, and also Dr. G. W. Dean, her family physician.

We placed her as in my former examination, and brought the abnormal parts fully into view by the bivalve speculum, and after careful inspection with a very small probe, or rather a fine silver wire which I used as a probe, I found a small opening a little posterior to the centre of the occlusion, into which the probe passed to the depth of about half an inch, but would go no further. This opening was the size of a medium bristle, and the probe was probably arrested by a curve in its sinuosity.

I then introduced a sound into the bladder, and Dr. Chubbuck and myself made a digital examination per rectum, to ascertain the thickness of parts between the rectum and bladder, and also to demonstrate the existence of the uterus, and ascertain its position.

We believed her general appearance and development evidenced the existence of the ovaries. We readily felt the uterus high up in the pelvis, towards the promontory of the sacrum, firmly fixed in its elevated position, but apparently of its natural size. By moving the finger laterally while firmly pressed against the curve of the sound, the parts seemed adherent, and as not having that freedom of motion indicating an intervening vagina. It was now concluded that I should attempt to reach the uterus by incision, and the 20th of October designated for the operation. On the day appointed I operated on her in Elmira, where her husband had obtained rooms and attendance, assisted by Drs. Dean, Chubbuck, and Morse. She had been kept on low diet for a few days, and her bowels freely opened.

We placed her on a table covered with blankets, and supported her by pillows before a window, and chloroform was administered by Dr. Morse. Anæsthesia being fully produced, her limbs were well drawn up, widely separated, and held by assistants, and the vulva held freely open, brought the parts to be divided fully into view. I then introduced the sound into the bladder, and with a finger in the rectum carefully estimated the thickness of parts. The operation was commenced by making an incision with a sharp-pointed bistoury on each side of the urethra, in a direction obliquely backward and inward, bringing them together but a little back or below the orificium urethræ, and then extending the incisions a little in a straight line towards the rectum. After penetrating to the depth of half an inch I exchanged the bistoury for a small blunt, narrow-bladed knife, with a cutting edge of three-quarters of an inch, such as is used by some surgeons for dividing the cord in tenotomy, having a long but very slender handle. This I introduced into the passage I had already opened, flatwise, upon the forefinger of the left hand, and then turned the edge against the parts to be divided, and very slowly, and little by little, separated them, constantly directing, and to some extent controlling, the cutting of the knife by the point of the finger For greater safety I frequently withdrew the knife, and taking hold of the sound, ascertained the proximity of the opening to the urethra and bladder, and by introducing frequently the right-hand forefinger into the rectum, for the greater security of that bowel, was able to determine the proper direction of the incision to be made, and the distance yet to be accomplished to reach the uterus. After proceeding with the first form of the incision till the immunity of the urethra from injury was secured, and finding that the bladder and rectum were now apparently in near proximity, I thought it the most prudent to make the incisions uniformly transverse or lateral. And making the opening large enough to admit my finger and the knife I was using freely, I literally felt my way along, till, in about forty-five minutes from the first incision, I reached the mouth of the uterus with safety to my patient, and could, with a little pressure, pass both my fore and middle finger fully up to that organ. The depth of the artificial opening from the posterior margin of the orificium urethræ to the os uteri measured four and a half inches. On reaching the uterus, the knife passed immediately and abruptly into a cavity which I was not prepared to find, and did not expect, and the thought was instinctive that I had cut into the rectum, and the cavity was the interior of that bowel. This, however, was instantly expelled on finding the cavity small, and only admitting the point of my finger to near the first joint, and that its parietes were thick and firm. This cavity was formed by the neck of the uterus. The orificium uteri externum being thus widely open, like an inverted funnel, the parietes of the uterine neck converged as it approached the orificium internum.

During the whole time of the operation, Dr. Morse, who was very familiar with the administration of chloroform, kept the patient fully under its influence, so as to avoid any untoward movement of her body. I now pressed a sponge into the wound to arrest the hemorrhage, which was considerable, though not very profuse, as no artery of any magnitude had been divided, and she was at once removed to her bed.

In the evening I visited her, and found her very restless and suffering considerable pain. Gave her a full dose of morphine, after which she slept well and passed a good night. The next day, October 21st, I visited her, found her very comfortable, removed the sponge I had left in the wound at the close of the operation, syringed out the passage with warm water, and inserted an elastic rubber rectum tube, well oiled, 5½ inches in length, and 3¾ of an inch in diameter. This was retained in situ by tapes attached to the lower end, and fastened to a bandage around her body. This tube was removed and cleansed twice a day while she continued to wear it, which was about one month; the first two weeks continuously, night and day, afterward only at night. On the 22d, I found her comfortable. At my visit on the 23d, found her feverish and suffering much pain. Gave her a laxative to move the bowels, and followed it by a half-grain of morphine; removed the tube and found the discharge very offensive, used warm water with chloride of soda to cleanse the passage and remove the fetor. On the 24th I exchanged the tube for one seven inches long and considerably larger, which she wore with but little inconvenience. She continued to improve from this time, and on the 2d of

November was able to ride to her home in an easy carriage, a distance of ten miles.

She continued to use a syringe twice a day with warm water, to which was added a little chloride of soda, alum, or sulphate of zinc. I procured a large strong four-ounce glass syringe in about two weeks after the operation, and directed her to use that instead of the metal one she had been using, and to pass it fully up to the womb, which she assured me she did once or twice a day. She was brought to my office from time to time for many weeks, and on each occasion I examined the condition of the parts, and watched carefully the progress of cure.

I think it was some time in the month of January that I last made an examination. The passage remained freely open. The mouth of the uterus still maintained that dilated condition up to the os internum, but little less than at first. She had just before menstruated without pain, but had very little discharge; and she informed me that her husband had now for the first time consummated their nuptials

It is now over five years since the operation, and during this time I have seen her frequently. She has continued to enjoy permanently improved health, and although she menstruates at irregular periods and in very small quantity, yet it is without obstruction, and as free from pain as is usual with healthy females. And although she now lives with her husband happily, unembarrassed and unrestricted in their connubial relations, yet, fortunately, she has never become pregnant, an immunity for her greatly to be desired, as this undilatable passage from the womb could never enable her to be delivered of a child.

Remarks.—Moreau, in his "Practical Midwifery," refers to cases of complete absence of the vagina, and says that in the skilful hands of Dubois and Dupuytren, women have fallen victims to the efforts made to save them, but that other surgeons have been more successful, and refers to several cases reported by other operators.

In the *American Journal of Medical Science* reference is made to the *Transactions* of the Obstetrical Society of London, in which two cases are reported by Dr. J. Braxton Hicks, one a complete atresia of the vagina, and an attempt made to form an artificial one, but the patient refused to submit to the completion of the operation. The other was a case of entire absence of the vagina, and the accumulated menses were drawn off by a puncture of the uterus through the rectum, after which she continued to menstruate regularly and without inconvenience or pain through that opening. Dr. Meigs, Dr. Bennet, Dr. Thomas, and Dr. Sims, all mention cases both of atresia and absence of the vagina, but I have overlooked if either records a case of an artificial opening having been carried fully up to the uterus where there was an entire absence of the vagina. Dr. Meigs, in his "Treatise on Obstetrics," makes mention of a woman who had borne children as having had her vagina entirely destroyed by ulceration, and that Dr. Randolph, to relieve her of accumulated menses, made by incision an opening nearly to the womb, but did not reach it. This passage, however, was kept open, till, on examination, the new vagina was found covered with a smooth surface resembling mucous membrane. After six or eight months from the operation, the accumulated menstrual fluid burst through into this newly-formed passage, and she was entirely relieved.

The same author, in his translation of "Velpeau's Midwifery," says he then had a patient under care, nineteen years of age, who had, he believed, a uterus, but she had no vagina, and that Dr. Randolph failed to reach the womb by operation, although he made an opening, he says, fully 3½ inches in depth.

ON HEREDITARY BONE-SYPHILIS IN CHILDREN.

Compiled from the Reports of WALDEYER *and* KOEBNER, *in Virchow's Archive.*

BY BERNHARD GRUNHUT, M.D.,
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WEGNER's interesting communications on the subject of *hereditary* bone-syphilis in young children, pointed out to us the value and necessity of carefully examining all lately reported cases of the disease; especially is its value indicated when we remember Köbner's case of death from syphilis vaccination, and thereby see its importance in connection with other grave questions. The subject in itself, therefore, being so important, is the excuse for our offering the following short publication. We hope that we will, in a measure, add a few points to the knowledge already acquired on this subject.

Our observations are based upon the autopsies of twelve cases. First, we can fully assert that the changes in the epiphyses were constant, no exception being found in our cases. It is true that in two of the following cases (10 and 12), no macroscopic changes could be detected, but microscopically their alterations were sensibly apparent.

Coinciding with Wegner, we must state that changes in the cranial bones are less often met with. In one case we found symmetrical gummy periostitis of the frontal bones, with large co-extensive extravasational formations, as is found in pachymentic chronic hemorrhages. We here also frequently found *granulations*, varying in size from a mustard-seed to a lentil, in the outer side of the cranial periosteum. Hardness of the dura-mater, accompanied by projecting syphilis growth, is noticeable. None of these changes are, however, constant in the cranial bones.

In reference to the hollow bones, we do not feel enabled to coincide with Bouchut, who says they become hardened, for we have found the same degree of hardness in the bones of normal children.

We can fully bear out the assertion of Wegner concerning the macroscopic changes which take place in epiphyses and intercostal cartilages. We have met with these changes in all their stages, from the mere spreading of the cartilaginous zone and of the spongoid tissue, to the complete separation of the epiphyses, which was observed by Koebner in a child four weeks old, and which he diagnosticated. The only other visible characteristics of congenital syphilis being a slight miliary eruption upon the soles of the feet.

We will first make some remarks on Case III.

A female child, born Sept. 28, 1870, pretty well nourished. On the 24th of October the only abnormality which could be detected on the visible mucous membranes and skin, were *three* small pustules on the sole of one foot, and *one* similar on the other. The extraordinary flexibility, even looseness, of both hands was something remarkable, and could only depend upon a separation of the epiphyses (lower) from the diaphyses of the fore-arm. Judging from the condition of the nails, the child was born about one week prematurely. The mother, unlawfully pregnant, and affected with condylomata lata of the genitals, had nursed the child, but it had as yet received no treatment. The mother (whose precise date of infection could not be determined) had been treated with mercury since the 12th day of August. The child died Oct. 25th.

Post-mortem.—Œdema cerebralis. Larynx, trachea, and bronchi normal, but covered with a quantity of mucous liquid. The entire lungs studded over with tough nodules, varying in size from a pin's head to a half-dime, separated from each other by cellular parenchyma, and rendering the pleura uneven, which is, however, everywhere intact. The smaller points are of a grayish red, the larger of a whitish yellow color; some have a red granular infiltrated circle, while others are purulently softened, looking like cheese. Investigating by the microscope, we find cells growing everywhere, following the course of the alveoli, the walls of the arteries, and the bronchi. Most of the alveoli are destroyed by this growth: some can be seen filled with large epithelial cells. The softened central masses consist entirely of well-preserved round cells, like pus, and we certainly have not, in this instance, a decomposition of a cheesy product, but a rapid formation and accumulation of cells (similar to pus) in the centre of granulating points. We find in the liver, under the serous coat, some light-colored spots, varying in size from a lentil to an almond, with well-defined borders. By the microscope we detect a growth of cells interstitially between the lower cells, as is found in commencing cirrhosis.

The cartilages of the epiphyses of the humeri and both bones of the lower arm are separated from the diaphyses; this separation, especially in the latter, is visible through the skin. Between epiphyses and diaphyses there is a reddish matter consisting microscopically of round and conical cells. The deepest cartilaginous zone we have found on the upper epiphyses of the humeri, which is transparent, and of a bluish color for about 2 to 3 mm. The whitish yellow zone (lying under the former) is composed of cretaceous cartilaginous tissue, everywhere thicker than normal, but not to that extent as has been described by Wegner. Besides the already mentioned zone, we find on the upper end of the humeri, and reaching into the granulated spongy substance of the diaphysis, an elastic reddish gray tissue of an irregular round border. We have found, in portions, spiculæ of bone, not entirely hardened, accumulated between the epiphysis and the diaphysis. This mass appears especially under the epiphysis of the right humerus, looking like a wreath of stalactites.

These masses resemble, macroscopically, incompletely hardened deposits of rachitis. Microscopically, they consist of densely compressed, very soft cells, of a great variety of form, similar, for the most part, to cells of gummy formations.

We call special attention to the fact that the macroscopical changes may be minimum, while the microscopic changes may show very characteristic anomalies.

As the first anomaly, we would mention an augmented growth of cartilage cells, on the border of ossification. These cells have not the regular form of cartilage cells, especially in the deeper layer, which is nearer to the border of ossification, but are in form and size more like the small granulated cells which we find in syphilitic products. We have also found the irregularly formed border spoken of by Wegner, and would lay importance on this, as characterizing the before-mentioned changes. Another very important point is the histological condition of the substance which fills up the spaces between the spongoid layer of Guerin. It has not the character of normal marrow tissue, but looks like a granulated substance which we can hardly characterize, as we find it everywhere in syphilitic changes in other organs. While we find in the normal *marrow* tissue cells of a lymphatic character, the same as they are in the spleen and in the lymph-glands, when changed by syphilis, these cells become rounded or spindle-shaped, and intimately connected by a tissue which can hardly be separated by the knife or torn by other means. The tissue which is formed by the aggregation of such cells is more or less dense, and undergoes the same changes as take place in other syphilitic formations. We find in some places exudations of a soft consistency, looking like pus; then again, some places in which the exudation is more fully organized; and, between these, metamorphoses in all possible stages. These changes are all found in the syphilitically affected bone-borders. Cases in which the epiphyses appear detached, show between epiphyses and diaphyses a soft gelatinous exudation, looking something like pus, but which we, on close observation, could never find to be pus, but consisting of cells connected more or less with one another, and resembling very closely semi-liquid sub-periosteal gummy growths. The former syphilitically affected epiphyses resemble the gummy formations found in the liver and brain.

Wegner, in different portions of his work (p. 311–314), speaks of the paucity of blood-vessels, even of their entire absence in the spongoid tissue. We have convinced ourselves on many occasions, and especially through a preparation of Dr. Carl Weigneirt, from the tibia, that so far from the blood-vessels being absent, they are very richly developed even in the spongoid layer. The necrosis of the layer between the cartilage and the normal parts cannot therefore be due to a want of blood-vessels, but depends upon a process which we cannot fully explain. We call attention to the remarks of Biesiadeck and others, explaining the decay of syphilitic products, which will, in all probability, explain the changes in question. We know that syphilitic products extend themselves with preference along the course of the blood-vessels; doing this they must certainly press upon and reduce the volume of the vessels, and thus interfere with the circulation, giving rise to the abovementioned local deaths, which we see are due not to a want of blood-vessels, but to a reduction in their volume, a want of elasticity or normal contractility. Another important point for the diagnosis of these changes is the want of developed osteal cells, which has been mentioned by Waldeyer and Gegenbaur. The rarity of these cells is somewhat remarkable in the diseased region.

In place of the osteoplasma, we often find small granular cells, some of a spindle-shaped form. The question necessarily presents itself, whether these cells can develop into bone tissue; and the answer is, that they are not capable of so doing. They seem to make the attempt to form bone, since we find small *particles* of bone matter, but they are not capable of full development.

Wegner, under the name of "osteo-chondritis," has looked upon this process as essentially one of inflammation, but most authorities look upon it as the result of syphilitic processes. We know that syphilitic-products vary much in appearance, degenerations and neoplasms being found in the same tissue. Both are the result of the same virus, both in the same individual, and between both there are many almost undetectable gradations. We have found this at least so, first finding compact masses, then purulent masses, which we think we could differentiate from the results of ordinary inflammation. For these reasons we do not think it justifiable, without further examination, to look upon the process as simply inflammatory.

We are indebted to Prof. Spiegelborgh for affording us opportunity to examine many of the following interesting cases:—

Case I. November 24, 1869.—Mother two years affected with constitutional syphilis; small thin child; eruption on skin; diffuse interstitial cell-formations in the lungs; swelling of the spleen; interstitial formations in the liver; swelling of the mesenteric glands; ecchymosis in pericardium; œdema glottidis; ribs and both tibia affected with palpable syphilitic changes; placenta not examined.

Case II. January 2, 1870.—Infant girl. Mother thought to be affected with constitutional syphilis; epidermis easily torn; diffuse swelling of the skin of the child, especially of the lips and eye-lids; slight œdema of the neck; ascites; diffusive granular growths on thymus; both lungs, liver, spleen, kidneys, and stomach affected with the same granular growths; atrophy of thymus; suppurative bronchitis and ecchymosis; palpable enlargement of the spleen, liver, Peyer's patches and mesenteric glands; numerous ecchymoses in mucous membrane of pharynx and larynx; syphilitic changes in ribs, tibiæ, and bones of the feet. The placenta not examined.

Case III. October 25, 1870.—Recorded above.

Case IV. January, 1871.—Placenta normal; epiphyses detached from diaphyses.

Case V. January 15, 1871.—Macerated premature child; mother affected with constitutional syphilis; changes in the peripheral borders (second stage); engorgement of spleen. Placenta not examined.

CASE VI. March 10, 1871.—Child five-weeks old, affected for four weeks with pemphigus; mother with circumscribed papular syphilides; father affected four years ago with psoriasis palmaris; twin birth. The first was mortified and not examined. In the lungs of the second child we found granular growths; Peyer's patches enlarged; small growths in the sub-mucous tissue; syphilitic changes in the epiphysis of the tibia. The other bones and the placenta not examined.

CASE VII. April 17, 1871.—Mother undoubtedly syphilitic. No syphilitic changes could be detected in the placenta.

CASE VIII. May 15, 1871.—Macerated boy; syphilis of mother not certain; palpable diffuse syphilitic changes in the placenta, also in epiphyses (second stage).

CASE IX. July 19, 1871.—Macerated fœtus, of twenty-six or twenty-eight weeks; syphilis of mother not proven; diffuse syphilitic changes in placenta; engorgement of spleen.

CASE X. August 10, 1871.—Boy of three months affected with papular and postular syphilis of the right ear, with destruction of the muscles, from the 18th to the 31st of July. He was treated with sublimate. Mother under treatment since the 26th of June. Large hard kidneys; ulcerative perforation of right cornea; fatty brain; slight macroscopic changes on the borders of the epiphyses which, when examined microscopically, conform to those of the syphilitic processes.

CASE XI. August 11, 1871.—Macerated male child of eight months; syphilitic through both parents; mother had had four healthy children; in last seven years five dead ones; diffuse syphilitic changes in the epiphyses.

If the etiology of the bone affections in these children is not sufficiently determined by the previous syphilitic affections of mother in cases 1, 2, 3, 5, 10, it is rendered positively certain in at least case 6. Syphilis of both parents, twin birth, one mortified, the other, besides apparent syphilis of skin, has these affections of the bones. We have examined both mother and father and find them both affected with constitutional syphilis. These specific effects being found not only in the liver and kidneys, but also in the lungs of this child, bear testimony to the assertion of Barensprung, that the effect due to the father being syphilitic, localizes itself in liver and kidneys, and from the mother, in the lungs. The evidences in the lungs of this child were not so numerous or so large as those found in Case III. Still we often find children syphilitic from the mother, whose lungs are not at all affected specifically.

CASE XII. November 4, 1871.—Nine weeks old;

affected with papular squamous syphilis for three weeks; coryza, hoarseness, and intestinal catarrh. Mother twenty-nine years of age; had five children (healthy) previously. The last healthy one, January 24, 1868. On October 28, 1871, we could find no trace of syphilis in her. Father infected December, 1868; ulcer of penis; afterwards pharyngitis; treated merely locally; at present free of all symptoms. This child was treated from October 28th with ung. hyd. On November 2d. perforation of left cornea took place, and it died on November 3d. Body and extremities found to be affected with "peeling of skin;" the cavities of nose and mouth are filled with a reddish brown matter, left eye sunken, ulceration of cornea as far as pupil; in left lung numerous hepatizations, with inter-alveolar cell infiltration, which filled some of the *alveoli* and compressed most of them; infiltration to an enormous extent in liver, also fatty deposits in same; spleen not enlarged, but rich in Malpighian tufts; enlargement of Peyer's patches; kidneys normal; cranium thin, regularly formed; anterior fontanelle large and stretched through the sub-arachnoideal exudation; the junction of ribs with cartilage, as also the epiphyses of the ulnar, radius and humeri-macroscopic normal; microscopic non-existence of osteal cells, which are replaced by granular cells.

The foregoing observations, together with those of Valliex, Borgenoni, Rauvier, and Wegner, leave us no doubt that these changes are a constant resultant, and dependent effect of syphilis. That there is no connection between this affection of the bones and mercurial treatment of parents, is assured by the fact that this mother was treated fifteen or sixteen months before conception, and not since then. This is also a valuable diagnostic point between hereditary and acquired syphilis (E. Vacioni) in infants, as has been mentioned by Koebner.

ON CATARRH OF THE FALLOPIAN TUBES—CATARRHAL SALPINGITIS.*

By PROF. CARL HENNIG, M.D., Leipzig.

This affection is very common, and, of the various catarrhs of the genital organs, occurs the most frequently. We understand by the term *catarrh*, that condition of a mucous membrane during which it secretes more mucus than is normal. In the histological sense, the genital mucous membranes may be catarrhal and otherwise changed, and yet "nothing flows away" (*καταῤῥεὶ*). In the case of the Fallopian tube, it is very seldom that the secretion drops out from its abdominal opening, unless the tube has been previously cut off. Whether, under ordinary circumstances, tubal secretion flows into the cavity of the uterus, is still an undecided question.

Having examined 103 subjects with reference to catarrh of the internal genital organs, I found that in 44 cases the mucous membrane of the tubes, 31 of the body of the uterus, 43 of the cervix uteri, and 27 of the vagina, was in a catarrhal condition.

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* Der Katarrh der Inneren Weiblichen Geschlechtstheile. Translated by John C. Jay, Jr., M.D., and B. F. Dawson, M.D.

Now, among these 103 cases, 22 were living, upon whom the examination with respect to tubal catarrh was not practical, but in whom the cervix uteri often showed a mucous flow: thus the preponderance of tubal catarrh is explained. For the most part, both tubes are affected; the left is more often singly affected than the right. In 27 cases both were affected; in 10 the left, in 7 the right; so that among 86 tubes examined, 69 of the whole were catarrhally affected.

PATHOLOGICAL ANATOMY.

In childhood, the Fallopian tube is scarcely appreciably altered in its position, sometimes somewhat swollen, and where the affection is of long standing, more than ordinarily tortuous, which latter is due to the broad ligament not being able to follow the lengthening of the tube caused by the catarrh. It is possible that the adhesion of several of the fimbriæ may be caused by the inflammatory process which affects the living mucous membrane.

The fimbriated extremities are found swollen and everted by the mucous membrane, which pouts out of the abdominal end. In the cavity is found abundant neutral or acid mucus. It consists of mucus together with protean molecules, but chiefly of a peculiar kind of mucus resembling albumen, and which we, for the sake of brevity, will call *Hyalin.*

We will meet with it upon other mucous membranes, although less frequently than in the Fallopian tubes, and microscopically this excretion consists of hyaline, pale rosy, or almost colorless, very elastic globules, of the size of milk globules; they are thinner than blood corpuscles, and flatten themselves against one another and against neighboring cells, like the cells of a honeycomb. The defined elements contained in the mucus of the tubes are few in number, and mostly ciliated epithelium deprived of their ciliæ, many round (young) and elongated cylindrical epithelial cells, partly from the layer of epithelium lining the tubes, and partly from the tubal glands; sometimes granular cells (in chronic catarrh), and free fat. Further, a few of the larger cells may show a combined state of fatty and hyaline degeneration. Only in individual cases is red coloring matter and indigo found, as was the case in a child of nine days examined by me.

1. *Acute catarrh in adults.*—The tube is found slightly increased in length, very tortuous, and contains a great deal of yellowish-white, limpid mucus; sometimes the mucus is whitish, or cream-like, and in old women greenish-white. It has either a neutral or acid reaction, contains much hyalin, glandular cells and ciliated epithelium, whose cilia are in many cases still retained, and sometimes convergent among themselves. In case one the hyaline substance originated chiefly round about the nucleus of the ciliated cells, and occasionally lifted off the cilia at its junction with the cell.

2. *Chronic Catarrh.*—We have met with the alterations appertaining to this condition oftener than acute catarrh. In some cases, it is rather a hyperæmia, with

increase in the quantity and size of the cells of the mucus; in other cases the grayish, grayish yellow, greenish yellow, pure yellow, or reddish-grayish yellow mucus is allied to pus, or even to the hæmorrhagic exudation; and finally, we sometimes find the products of inflammation without there being of necessity a coexistent increase in the quantity of the secretion.

The catarrhal process may proceed in another manner; to a serous secretion, where the secreting surfaces produce spindle-shaped, and even flattened cells. The severe cases in which the tube becomes thickened, and of a yellowish or dark-red color, are characterized by the escape of blood corpuscles, which mix with the mucous membrane in various quantities; the milder cases commence with an excess of free hyalin—toward recovery an abundance of granular cells is noticeable; free fat is mostly met with in old women. In every case the affected tube is longer, more flaccid, and its fimbriated extremity sinks down towards Douglas's space, where it is also very liable to become adherent to the ovary or any neighboring organ. I do not doubt that chronic catarrh may be associated with peritonitis, and will speak of the pathology of the latter among the effects of tubal catarrh. Anyhow, the circumstance that the tubes have very thin walls, which even during a catarrh only occasionally become thickened, is as favorable for the occurrence of an inflammatory change of the adjacent serous membrane, as is catarrh of the auditory canal for inflammation and suppuration of the neighboring membrane of the Dura mater (Toynbee);

besides, it may be caused by perforation of the tubal wall by a catarrhal ulcer, though this is exceedingly rare.

Now and then the external surface of the tube is covered with a colloid granular or chalky matter.

The mucous membrane of the tubes in adults affected with catarrh of long standing, has an alkaline or amphoteric reaction, that is, it reacts both somewhat alkaline, and also somewhat acid, upon vegetable colors. It is opaque, pale pink, yellow or black pigmented, less often highly injected.

If there has been much venous congestion, then the entire membrane appears purple, and the mucus upon it brownish or even bloody; ecchymotic spots are also generally present. In other cases, the mucous membrane is very pale, especially if it has been œdematous; these conditions generally coexist with general disturbances, are then also evident in the other genital organs. The mucous membrane in chronic catarrh is generally loose, easily moveable, swollen, even rugged, and rarely softened. The entire membrane was found softened in a young girl, age eighteen, who was attacked with scarlet fever on the second day after delivery.

Complications of Tubal Catarrh.

Concerning flexions and strictures of the catarrhal tube, which are more frequently causes and effects than co-ordinate phenomena of tubal catarrh, I will speak more particularly later, and will here merely remark that both are very frequently associated with catarrh, and indeed occur more frequently with than without it. In five cases I found that the canal of the Fallopian tube was enlarged; in two cases it was found continuous with a corresponding cavity in the ovary ("Hydrops ovarii profluens"). I have treated of this latter rare occurrence elsewhere, when speaking of the treatment of ovarian tumors.* In five cases the entire tissue of the Fallopian tubes was found inflamed, in one case it was tuberculous; in another the Fallopian tube was, together with the uterus, in a state of fatty degeneration; while in still another the probably syphilitic inflammation had caused softening of the mucous membrane. Finally, in one case there existed a perforating ulcer. In one case, lymphatic vessels, filled with a whitish fluid, were found upon the inflamed puerperal Fallopian tube. In two cases the principally affected right tube was covered with numerous small cysts, and in one a peritoneal cyst had become adherent to the catarrhal tube.

In twenty-four cases evidences of peritoneal inflammation were present, which in seven of them had not ceased; one case showed not only the results of previous peritonitis, but also an endocarditis, pneumonia of the right side, icterus and ecchymosis of the liver, chronic nephritis, and eczema of the skin. Further, in six women, ascites was met with.

Adhesion of the ovary to the diseased tube occurred eight times; to intestine, once; to ovary and intestine once; to the uterus, once.

Tubal catarrh was found in connection with anomalies of the ovary in twenty-three cases; and with anomalies of the uterus in twenty-six cases, viz., eight times with uterine catarrh alone; six times with uterine catarrh and phlegmorrhea of the vaginal portion; four times with uterine catarrh and vaginal mucous discharge; thrice with uterine catarrh and cervical and vaginal mucous discharge; once with uterine catarrh and fatty degeneration of the uterus and oviduct; twice with uterine catarrh and fibroids of the uterus; twice with uterine catarrh and cancer.

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* C. Hennig, die chirurgischen Krankheiten des Eierstocks; Monatsschrift für Geburtskunde. 1861.

Beside the above given complications, there was a cervical discharge in thirteen cases, of which two cases had also vaginal catarrh.

Of the more remote affections in connection with which tubal catarrh was found, are the following.

Twelve times, tuberculosis of the lungs, often at the same time of other organs, and once the tube itself was the seat of tubercular infiltration.

Sixteen times the alimentary canal was primarily diseased or the cause of death; twice, strangulated hernia; once, cholera; twice, typhus abdominalis (one of these having pleuritis; one chronic meningitis); twice, hyperæmia and follicular catarrh of the intestines (one with hyperæmia of the brain and infarction of the lungs; one with meningitis); one, cancer. In one case I found ulcers and chronic catarrh of the rectum together with hydrometra, chronic hydrocephalus, inflammation of the lungs and cysts at the neck of the bladder, after a happy recovery from fracture of the leg; in one, intestinal and peritoneal inflammation; in one, icterus, muscular abscesses, pus in the crural vein, peritoneal and pneumonic inflammation, together with infarction of the renal capsules; one other had pyæmia, still another had various purulent collections and infarctions after typhus.

Fatty liver occurred in connection with coxitis in one case; cancer of the brain was present in one case; pleuritis was present in one case; emphysema was present in one case; valvular disease of the heart was present in three cases, one of which died during her menstrual period; Bright's disease was present in two cases; one at the same time with erysipelas.

Etiology.

The causes of catarrh of the Fallopian tubes still remain uncertain, for as it is rarely found as a primary affection, we must suppose that under favoring conditions, in the majority of cases, it passes away without our knowledge and assistance. Certain it is that tubal catarrh, as long as it does not produce a perforating ulcer, is not fatal, and hence its discovery in the cadaver will be a casual one, and the catarrh rarely referable to any (determined) cause. It is otherwise with the sympathetic and secondary catarrh.

1. *Idiopathic Catarrh.*—I do not know of a single case in which this formed the exclusive lesion in the cadaver. E. Wagner* reports a case in which an ulcer of the mucous membrane of the Fallopian tube perforated into the abdominal cavity, and produced fatal peritonitis in a pregnant woman. From the description, I believe the ulcer to have been a catarrhal one, and I cannot but suppose that the serous infiltration accompanying the tubal catarrh caused the softening of the

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* E. Wagner, *Monatsschrift für Geburtskunde*, 1859.

walls, just as I have several times demonstrated softening of the mucous membrane in puerperal tubal catarrh. True tubal pregnancy will not fail to cause catarrh in either tubes. In regard to this supposition I am the more convinced, as at least the consequences of catarrhal inflammation have already been reported by various authorities. Not unfrequently, also, are the fimbriated extremities of the tubes found adherent to the ovary. This was the case in three instances which came under my notice. The abdominal end of the right tube was adherent by old adhesions to the right and posterior side of the uterus, and the canal of the tube was very much increased, tortuous, and much distended by a gray, purulent thin fluid (Hydrops tubæ).*

Outside of pregnancy, catarrh and inflammation of the Fallopian tube is frequently supplementary to the puerperal state (one of my cases showed bloody purulent mucus in the left tube without the uterus being affected; another an abundant yellowish-gray alkaline mucus in both tubes, the mucous membrane of which was strongly injected and softened; no catarrh existed in the body of uterus), for the most part a continuation of the puerperal inflammation of the uterus. Whether cold and styptic injections, undertaken on account of post-partum hemorrhage in the puerperal state, cause chronic inflammation of the tubes, depends undoubtedly upon the force with which they are injected, and upon the strength of the chemical material. Outside of the puerperal state the catarrhal process is most active at the menstrual period. This is not surprising, as organs in general take on diseased action easiest at periods of unusual activity and physiological hyperæmia. Haller, Gendine, Bischoff, and others, have long ago demonstrated that during the first days of menstruation the human Fallopian tube throws off its epithelium, "moults," as is the case in the Fallopian tube of the bitch. Scanzoni's sentence, "acute inflammation exists only during the menstrual congestion of the uterus," confirms my case.

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* A. Kussmaul, *Von dem Mangel, u. s. w., der Gebärmutter.* Würzburg, 1859. S. 371.

It is true that in two cases of violent death in which I had the opportunity to make an examination, I found decided catarrh of the tubes, in one of them acute catarrh; but there was also in the first case (gunshot wound of the liver), a catarrh of the uterus, the product of which resembled that of the tubes, and was therefore perhaps primary; in the other case (phosphorus poisoning), it is doubtful whether abortion had not taken place, though this at least was a decided case of primary affection of the tubes, for the uterus was free from catarrh and inflammation, and the vagina was inflamed and contained much yellow excretion, with numerous ciliated epithelium. The latter came either from the tubes or from the cavity of the cervix, the secretion of which was also increased. This condition resembles in many points the Kopf case.* "A young woman, twenty-four years of age, died three days after eating the heads of three packages of matches, of gastro-enteritis. (The tubes unfortunately were not examined.) The uterus was in a virgin state. The mucous membrane of the vagina was easily detached, and was covered with a thick yellow mucus; from the vagina flowed an abundant thick orange yellow fluid. The labia majora were œdematous, and at different points excoriated." In men, also, after the injection of phosphorus, we find injection and softening of the mucous membrane of the urinary tract, and during life excitation of the genital organs.

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* *Allgem. Wiener Med. Zeitung*, 47, 1859.

2. *Deuteropathic Catarrh.* — Symptomatically it produces changes in the position and tissue of the Fallopian tube.

a. Flexures of the Canal.—Whether caused by adhesion of the tube with a neighboring organ, or of the inner and outer portion of the tube, or by dislocation from the side of the uterus, or by a burdening of the fimbriated extremity with a tumor (or by cramp?), we will find such tubes bent back upon themselves; they cannot, like the flexures of the uterus, fail to cause a closure of the vessels of the mucous membrane, and, according to the amount of irritation, catarrh.

Among eighty-one subjects of all ages and conditions flexure of one or both tubes was present in twelve. In five cases it was the right tube; in five, the left tube, and in two, both tubes were much bent or flexed. Among them, nine had a catarrhal or inflamed purulent mucous membrane; in five this was on the right side, three on the left side, and one on both sides. Both tubes were much flexed, the left bent back upon itself, and adherent in that position, the mucus strongly alkaline, without ciliated epithelium; there were a few swollen glandular epithelial cells, numerous, young, very delicate cells, shrivelled old ones in a state of fatty degeneration; very little hyalin.

b. Constriction.—The Fallopian tube is normally constricted, to facilitate the entrance of the ovum just escaping from the Gräfian follicle, and to render more difficult its passage the nearer it approaches the uterus, or at least to retard it. This arrangement has its disadvantages, inasmuch as the slightest constriction of the uterine end of the tube, by the tendency of the uterine tissue to swell, endangers the passage of the ovum, and can prove an obstacle to the discharge of accumulated mucus and blood; besides, it is not an extravagant theory that such a stenosis may cause an anti-peristaltic movement of the oviduct.

One or both tubes in the same subject, were found eleven times constricted, and of these nine were catarrhal, viz., four on the right side, two on the left side, and three on both sides.

c. Occlusion.—The tubal canal has not unfrequently become impassable, by the mucous membrane, deprived of its epithelium, closing the calibre of the canal, by a growing together of the opposite surfaces. Granted, that this change is mostly the result of catarrhal swelling, as will be proved later, still nothing is contrary to the proposition, that such an impermeability checks the passage of the secretion, and that the latter, if it is not reabsorbed, accumulates. In fifteen cases I found the canal impeded, once the entire tube was impermeable; in this case, of course, a secretion is not to be thought of. Of the fourteen other cases, in ten they presented catarrh, that is, increase of mucus, and one inflammation. In five it was the right tube, and in four the left; in one both tubes were impervious, and in three cases the uterine orifices, and twice (left side) the abdominal orifices were closed; other cases were found impervious at several different points. In one of the above cases the contents were, to be sure, small in quantity, but pasty, as is often the case in chronic catarrh.

Most instructive were three cases, in which the uterine end closed without any accumulation of mucus before it; two in which both tubes were impassable at a point near the uterus; and one in which the canal stopped 2½ cm. from the abdominal end.

Catarrh and inflammation of neighboring parts, and especially those parts similar in function and in nerve supply, are the most general excitors of catarrh in the Fallopian tubes. First and foremost of such excitors stands catarrh of the uterus. We have seen that it accompanies tubal catarrh more frequently as corporeal catarrh than as cervical, and is as a rule the cause of tubal catarrh. I do not mean to say by this that tubal catarrh may not itself sometimes occasion catarrh of the uterus, especially as the former ranks the latter in frequency, as I have shown previously. The demonstrated frequent concurrence of anomalies of the ovaries with tubal catarrh, is certainly not accidental, only in this case the phenomenon of irritation and the propagation of the irritation to the abdominal end of the oviduct, which, as already shown, is always in intimate relation with the ovary, is to be distinguished from mechanical influences, as when a tumor of the ovary causes stoppage of the vessels of the corresponding tube, and thus, through pressure, causes hydrops. The peritoneum and intestines have a very intimate relation with the tubes. Even in childhood diarrhœa and enteritis give rise to tubal catarrh.

3. *Secondary Catarrh.*—It has been remarked how frequently tubal catarrh occurs in those suffering from tuberculosis. It may be that tuberculosis of the lungs or of the bronchial glands, excite this as well as other catarrhs chiefly through the increased pressure of the venous circulation. The same is true in cases of cardiac diseases. In the one case seen by me, a peritonitis consequent upon a strangulated hernia was the exciting cause. In addition, the tube was so constricted that the uterine end was impervious. The acid reaction of the greenish white mucus and the simultaneous acute catarrh of the uterus speak for the first; for the latter the thickened walls. This is an example of complicated etiology, the analysis of which recommends itself for study. Much more manifold are the disturbances of the circulation, consequently the causes for an increased secretion of mucus in the "pyemic" processes, and the acute exanthemata and other diseases (typhus, poisonings, syphilis), of which some give rise to acute and others to chronic catarrh. We now come again to idiopathic catarrh, especially where the puerperal state and a congested condition of the sexual organs act as prædisponentia.

III. More remote causes. 1. Age is a cause during the years of sexual excitement, and again in old age, on account of the frequently diseased condition of the uterus and of the ovaries. In the latter, also, general causes unite with local ones (too frequent coition, displacement, or prepuce from a tumor; peritonitis).

The life of the prostitute, and probably the period of pregnancy, are the most productive fields for tubal catarrh; the puerperal state the least productive. Married women are less often exempt than all individuals past the menopause in the various social positions. Widows are less seldom spared than children. Chaste women are more subject to catarrh than the prostitutes, the young, and the married.

It is moreover interesting, that of married women before the menopause, less than half, and after the same more than half, are affected.

(To be continued.)

ON CROUP AND DIPHTHERIA.

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THE discussion on the subject of diphtheria, in the *Berlin Medical Society*[*] ended with the statement that "diphtheria is necrotic in the throat, is croupous in the larynx." This conclusion cannot be confirmed by post-mortem examinations. In genuine croup, we find in the larynx, less often in the trachea, and more seldom in the bronchi, the necrotic elements. In diphtheria, however, these elements are found even as far as the bronchioles. The progress of diphtheria of the throat is so different to croup in larynx that they cannot be placed in the same class or even the same genus of diseases. Diphtheria of the throat leaves deep *erosions;* croup, on the contrary, does not leave such marks, the throat in genuine croup being entirely free; at most the tonsils may have a light red, never a necrotic appearance. If the membranes of croup be removed by emetics, or other measures, healing is often spontaneous. In diphtheria such is never the case. In croup we find plastic lymph; if this be removed we see a sharply reddened, sometimes bloody, but never gangrenous membrane. Croup is in fact a genuine laryngitis, seldom extending itself in the bronchi or bronchioles; while it is the rule in laryngeal diphtheria for it to extend itself to these portions. I have never found croup to be *contagious.* Of course, under favorable circumstances, every disease may become epidemic, but it is never *contagious.* I have never taken any measures to prevent the spread of croup, and yet have never found it contagious, while even the non-epidemic diphtheria I have always found so. Genuine croup, on the whole, is not epidemic, diphtheria is generally so. The progress of the diseases is different, and they generally commence differently. Croup begins with a light cough (I am speaking of genuine croup, not the false, spasmodic variety, which commences suddenly in the night with an attack of suffocation, and vanishes in a few hours). If an attack of croup commences while diphtheria is epidemic, the most careful observation will fail to detect any diphtheritic spots on tonsils. In diphtheria, on the other hand, the necrotic spots are first seen, and the laryngeal symptoms come on from one to three days afterward. Diphtheria comes on often without any fever. Croup always commences with fever. Paralysis of the velum pendulum, or of the extremities, is never a consequence of croup. The paralysis following diphtheria is specific. The wounds caused by operations for croup generally heal. I would therefore recommend operative procedures only in *laryngeal croup.* The therapeutics of the two diseases must in consequence be entirely different. In genuine croup local blood-letting is often useful. In diphtheria, as is confirmed by many authorities, this is never useful, and often injurious. I have given in very bad cases of genuine croup, where attacks of suffocation, cyanosis, and coma, threatened a fatal termination, one grain of calomel every fifteen minutes to children of six or seven years without producing salivation, and with some success, while this would be certain death in diphtheria. The two diseases in their progress may show similar, but never the same symptoms. The etiology of croup may generally be traced back to *cold.* This is rarely the cause of diphtheria. Croup is essentially a disease of *children.* Diphtheria respects no age. In the first epidemic of diphtheria in Paris, the treatment most recommended was the speedy removal of the necrotic spots. The powerful contagiousness of these *white* spots is shown by the sad fate of a surgeon, who while engaged in removing them from a child, had a particle of the membrane alight on his own lips, whereupon he was attacked with diphtheria, and died, while the child recovered. Caustics should be used in a moderate manner. I order it because I believe that it protects the under-lying membrane. Kali chloricum is not useless, but has no certain effects. Emetics are useless in laryngeal diphtheria, are unnecessary in tonsillar, and can only claim efficacy in croup, and this by their antiphlogistic power. Mr. Boyniki has, with full right, pointed out as the salient differential point between croup and diphtheria, the non-contagiousness of the former, while the latter is so strongly contagious. As a résumé, we would claim that neither the history nor the pathological changes, neither therapeutics nor post-mortem examinations, show any identity between the two diseases.

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ON THE NATURE, ORIGIN, AND DESIGNED CONSERVATIVE PURPOSE OF UTERINE CANCER.

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In venturing an opinion on the pathology of malignant growths, I have selected cancer of the uterus as a type of this kind of pathological formation, because the cases that occur of cancer of the womb exceed in number the whole sum of cases occurring in other organs, and hence the conditions—so difficult to discover—that give rise to the disease, if they are to be found at all, ought from the very frequency of their occurrence and their presumed intensity of degree, to be less likely to escape observation in cancers of the uterus than in similar growths occurring in other organs.

Having long been a convert to the belief that pathological new-formations are attempted conservative modifications of structure, designed—when they shall have become complete—to adapt the modified organ to new external conditions that have been brought to act upon it, or to altered functions that it has been called upon to perform, I am the more desirous of defining the position held by malignant growths when they are considered in accordance with this general principle of conservatism; especially as it is hoped the explanation may clear away from the minds of those among my medical brethren with whom I have had occasion to discuss this theme, what has seemed to them an insuperable obstacle to the acceptance of a theory, having for its foundation-stone the proposition that organic diseases result from the organism attempting to modify its structures, with the purpose of adapting them to modified surrounding media.

The almost uniform fatality of cancer would seem to preclude from it any quality of conservatism; yet we hope to show that the most malignant growths begin with the same beneficent design, and are governed in their progress by the same conservative laws that regulate other more benign formations. To elaborate and sustain this latter idea will be one of the leading objects of the present paper.

Every disease, whether only functional or structural, is the product, mainly, of two separate factors, viz., first, impressions made on the body from without; and, second, the reactions resulting from, and following such impressions performed by the organism itself. The *force* that generates disease is therefore the *reactive power* of the living body, and this is not a chemical or a physical force, but a purely vital one. The *direction* of the power thus elicited in obedience to external impressions, and the consequent quality of the resulting product—of the *tertium quid* disease—is determined by the fixed vital laws governing growth and development; just as a cannon ball, when set in motion by a physical force, is influenced in its direction by the laws of mechanics, or as the result of a chemical reaction is determined by fixed chemical laws. Variations, however, in the case of pathological new-formations, may arise from pre-existing differences in different organisms, or in any of their special organs; and the result, it is also quite evident, must differ according to the kind, variety, intensity, persistency, number, concurrence, order of succession, etc., of the impressions that act upon the body from without.

Now cancer, as we find it, is *per se* a *faulty* formation and leads to death; but the defect, though ever so evident, must be ascribed, not to the organism, nor to the reactive powers with which it is endowed, nor to the influence exerted by fixed laws of growth in determining the direction of the reactive force toward a special result, for all these were contrived by the divine intelligence who designed everything for good, who framed all laws chemical, vital, and physical, and who surely would not implant in an organism predestined to maintain its own preservation, the disposition to originate spontaneously within itself processes tending only to destruction. Such a phenomenon of suicide—of histogenetic madness—cannot justly be imputed to the organism. An explanation of the destructiveness, an excuse, so to speak, for the faults of cancer, must be sought elsewhere. To reach this explanation I must first announce as a basis for what is to follow certain fundamental propositions or facts, pertaining to the nature of all pathological new formations, the truthfulness of which will, I think, be very generally admitted. To wit:—

First.—A perfectly natural animal organism, and each of its several organs, is adapted by its specific physiological construction to live under the impression of certain particular natural conditions which influence it from without, and which demand from it the performance of those functions only which its original physiological formation adapts it to perform. So long as the external conditions remain natural, the organism itself will also continue in its natural state; in other words, the result will be *organic health.*

Second.—Should the external conditions change from natural to *un*-natural ones, there will soon follow a corresponding change, first functional, then structural, in the organ or organs more particularly influenced. These changes constitute what is called *organic disease;* and the new conditions that produce them, *causes* of disease.

Third.—The new structural formations thus produced, —like embryonic structures that develop physiologically— are designed, when they shall have become complete, for a specific purpose, namely, to modify the organism so that it may be adapted to the new conditions that have been brought to act upon it: the particular organ undergoing change thereby becoming adjusted, as best it can, to the modified functions which the altered conditions of life have required it to perform.

Fourth.—The pathological structural modifications thus set up—like the original development of physiological structures—can only progress gradually, hence a considerable *time* must be allowed before they can attain completion.

Fifth.—When any external influence, acting upon the body as a stimulus to new function, and therefore secondarily to new formation, is withdrawn, the structural modification begun, will cease to progress and fail to reach completion; and the affected part will also begin to undergo a retrogressive modification back again to its original state, but this last can also only go on *gradually*; hence it requires *time*; and moreover, this reconstruction of the part is seldom or never so complete as to fully restore to the organ the pristine integrity of its original state.

Sixth.—When new external conditions of life, acting as stimuli to new-formation, remain permanent for a lifetime or continue to exert their influence for a succession of generations, the necessary organic modifications, or at least a predisposition more readily to undergo them, will be transmitted from parent to offspring.

Satisfied with the general, though limited assent accorded to the truths embodied in the foregoing propositions—for they have been elaborately discussed and ably defended by Herbert Spencer and other eminent writers—I shall not here attempt anything like a plea for their unlimited admission, further than is necessary for considering the pathology of cancer. But I fully believe that *all* pathological new-formations are *attempts* in the direction of conservative structural modification.

In the next place it will be highly relevant to the subject under discussion, and indeed necessary for its correct understanding, to point out some of the numerous disturbing circumstances that interfere with the typical progress and final completion of any pathological organic modification that may have been commenced.

Pathological growths, like physiological ones, can only attain their designed completion under certain specific favorable circumstances, and it is strikingly true that *the conditions necessary for completion are of the same sort in both physiological and pathological formations;* both kinds of growths, too, are influenced in a similar manner by similar disturbing agents; both, when left to pursue their designed typical course, are devoid of subjective symptoms: they are latent; and they then also both display a never-failing quality, namely, slowness of growth, or chronicity. In fact the analogy between physiological and pathological formations is so exact, that the latter can be rightly regarded only as modifications of the former.

Thus *physiological* growths require that the *perfect nutrition of the organism* in which they occur should be preserved; so do *pathological* ones. An impaired general nutrition would therefore be a sufficient reason why both physiological and pathological formations should fail in reaching their designed completion.

Growing physiological structures require *continuous warmth*, or at least *protection from sudden depressions of temperature;* so likewise do structures undergoing development pathologically. Hence we observe the scrupulous care with which all animals instinctively protect their young and rapidly-growing progeny from cold; and also a corresponding liability to be injuriously influenced by cold on the part of patients undergoing pathological development, as well as a like instinct on their part to protect themselves from exposure to vicissitudes of temperature. The result of subjection to undue cold in either case (*i.e.* whether it be a physiological or pathological growth that is going on), will be acute congestion, or acute inflammation of the developing organ. Hence the greater mortality during childhood and infancy, when growth is rapid, as compared with that of adult life, when growth is complete. Hence, too, the greater liability, on exposure, to acute inflammation of particular organs (those that are growing rapidly) at particular periods of life; for this reason a child suffers from acute inflammation of the digestive organs more frequently than it does from similar affections of the reproductive organs. In like manner we observe how frequently the lives of persons affected with chronic latent pathological organic change, terminate by acute inflammation of the pathologically developing organ, after the patient has been exposed to a depressed temperature. Exactly thus also do we explain why, on several persons being exposed to cold, one comes home with an acute pneumonia, another with acute nephritis, another with acute articular rheumatism, while yet another weathers the storm, but suffers no material acute symptoms in any organ. In the three first individuals latent organic disease pre-existed, respectively, in the lungs of one, the kidneys of another, and in an articulation of the third, while the fourth was a well man before exposure, and the same afterward.

Again, as the physiological growth of an organ is in some sort a tax upon the vital powers of the general system, it is wisely ordained by nature that the various organs of the body should not reach the period of their most rapid development at the same time, but in succession. This is well illustrated in the case of the development of the reproductive system at puberty, which has remained quite dormant while the other organs of the body were undergoing their development. And we see frequently enough the complete development of the reproductive organs, and the consequent establishment of their new functions unusually delayed, simply because the process of growth in the organs whose place it is to be completed first, has been late in attaining its completion, and has therefore engaged for a longer time the quota of vital power naturally appropriated to the process of growing. So it is with pathological growths, a multiplicity of them occurring in the same organism, at the same time, do not reach completion, because the vital energies of the general system are overtaxed, and the all-important function of general nutrition consequently weakened. Another circumstance that interferes with the designed course of both physiological and pathological formations, is the expenditure of vital force, and consequent weakening of the whole organism from too much work, whether mental or bodily. , Hence the child and the sick man require freedom from mental care and rest of body. Hence, too, the more rapid mortality in latent organic disease, among those who are compelled to labor to a greater extent than the powers of the system can afford.

An easily digestible and nutritious diet, given in proper quantity and sufficiently frequent, is another indispensable prerequisite to the successful completion of physiological and pathological formations. To reduce and absorb hard and innutritious substances is a great tax, especially with organs that are growing. Hence nature supplies the child with *milk;* and the wise physician gives the same and similar substances to his patient; hence, too, the great mortality among the ill-fed children of the poor, and the lately-demonstrated superiority of the sustaining over the depletory system in the management of disease.

Especially disastrous to an organ undergoing pathological modification, as also to one that is developing physiologically, is exercise—particularly if sudden, violent, and prolonged—of its peculiar function. A sick *man* cannot work, neither can a sick *organ.* As the developing digestive organs of a child are injured by giving too much food, or food capable of being digested only by those of older age: as its organs of locomotion suffer by too early learning to walk, and its brain from too early application to study; so, in like manner, may a typical, latent, chronic, organic, pathological modification of (for instance) a kidney, remain unknown and without symptoms, until the function of the organ is unluckily violently excited by a medicinal diuretic, or by the sudden demand for renal function arising from suppression of the cutaneous transpiration; and how often is a long-existing latent change in the lung first made manifest by the hemorrhage, or congestion, or acute inflammation, that follows dancing, running, or other violent physical exercises, that abruptly demand a considerable increase of the respiratory function.

Designed pathological and physiological growths may be further disturbed in their development by physical and chemical agents acting locally upon the growing organs. Apart from physical and chemical violence, such as results from falls, blows, burns, scalds, etc., interference may take place much more gradually; as from certain modes of wearing apparel, particular positions of the body peculiar to certain occupations, the injudicious application of surgical contrivances, etc.; and also as from acidulated or alkaline liquids, and certain gases or powders which gain access, in a more or less diluted form, to the cutaneous surface, or to the interior of mucous canals.

Perhaps these thus far mentioned are some of the most potent agencies that disturb and interfere with the designed completion of conservative pathological and physiological growths. Numerous others, however, of more or less moment, might be added, would the proposed limits of this article permit.

To recapitulate, we find that when organs are undergoing physiological development or pathological modification, there are required in either case:—

First, that the general nutrition of the body should be perfect; *second*, that the organism should be protected from exposure to cold; *third*, that a plurality or multiplicity of growths should not be progressing rapidly at the same time; *fourth*, rest, or at least exemption from mental and bodily fatigue; *fifth*, the organism must not be taxed to reduce and assimilate indigestible food; *sixth*, the growing organs must not be suddenly and violently exercised, even in the performance of their own peculiar function; *seventh*, the growths must not be embarrassed by the contact of physical or chemical agents.

Now, while it is quite true that both benign and malignant pathological growths may be alike injuriously affected by these disturbing and obstructing circumstances (affected indeed in such a manner as justly to atone for any want of completion—for any lack of conservative use in the new formation), yet it is plain that there are certain characteristics belonging to cancers that do not seem in this way sufficiently accounted for.

In no one—nor yet in all, should they co-exist—of the disturbing conditions referred to, can the element of malignancy be shown to originate; and conversely. Should an organism in which a cancerous growth has begun, be totally exempt from the disturbing conditions that have been mentioned, yet the malignant character and unsuccessful termination (so far as the attaining of any conservative result is concerned) of the pathological formation would be no less manifest. Some additional explanation therefore is necessary before cancer can be considered as the result of attempted conservative modification of structure designed for purposes of adaptation.

But before proceeding with this explanation, and to facilitate it, let us call to mind some of the well-ascertained characteristics of cancer that serve to distinguish it from physiological and benign pathological formations. Prominent among these may be mentioned the following:—

First.—Cancer never completes its development. It never reaches any typical destiny, such as may be observed in the course of other organic diseases in which the element of malignancy does not obtain. Apparently objectless, it has no definite termination except local death by ulceration.

Second.—At no stage of its development does the cancerous mass assume such a shape as to allow of tracing any analogy between its own form and that of fully developed organs, whether in man or in other animals.

Third.—Examined microscopically, the tissue of cancer is found to be composed of cells, of such an anomalous shape as not to allow of tracing any analogy between them and the cells composing full grown normal or benign tissues. Resemblances, however, may be traced between cancer cells, embryonal cells, the cells of unfinished benign pathological new-formations, and those composing certain forms of vegetable life. In a word, cancer is pre-eminently *heterogenous.*

Fourth.—Cancer, in its histological composition, is remarkably *heterogenous;* its cells have a greater variety of size, shape, and structure, than those of physiological and benign pathological tissues.

Fifth.—With some qualification the liability to cancer may be said to *increase with age*, it certainly occurs for the most part late in life.

Sixth.—Excluding *secondary* cancerous formations—which result from the mechanical transmission of cancer germs (cells) to parts distant from the original seat of disease—the primary disease occurs less often in the meaner organs of the body, more frequently in the nobler ones—those whose function is more complex and varied. Among the latter, we may instance the uterus; among the former, the voluntary muscles and the bones.

To this category of facts must still be added another series, before we are fully prepared to crystallize the single idea that forms the nucleus of this paper.

Reference must be had, namely, to the mode of origin and progress of pathological new-formations generally, for it is among these that cancer has been rightly classified. And here we shall see again the striking analogy, in many particulars, between pathological new-formations and those that develop physiologically; that is to say, embryonic growths.

The organs of the embryo arise by progressive development from the cells of the blastoderm. The growths that we denominate pathological *new-formations*, whether malignant or benign, arise by progressive development from a stock of formative germs disseminated through all the parts of the body (apparently for the very purpose of supplying the histological elements, from which, when required for purposes of adaptation to surrounding media, new structures may be developed), namely, the "cells of connective tissue and its equivalents." (Virchow.)

So far as our powers of observation by the microscope enable us to ascertain, the cells of the blastoderm at an early period of their development, are alike in many animals that are later quite different. And in like manner may be noted our inability to differentiate between certain connective tissue cells, from which, however, under different circumstances, very dissimilar new formations may be produced.

Again, as the blastodermic cells of the embryo would never have begun their development without fecundation of the ovule, and never have completed it in the absence of certain favorable conditions (stimuli) which promote their natural and regular growth; so the connective tissue new-formation cells existing in the tissues of the body would remain permanently as such during the whole of life, unless the stimuli to new-formation (viz., changed external conditions) were brought to act upon them, and thus excite their development into new pathological structures. So then, apparently, similar blastodermic cells, guiding by the impression of dissimilar stimuli, reach dissimilar ends: in one instance the product is a frog; in another a bird; or it is a horse, or a human being, etc. But in every instance we note that the special stimuli have so influenced and guided the growing embryo into the possession of particular qualities which give it, when development is complete, a felicitous adaptation to the surrounding stimuli themselves.

So also, apparently similar connective tissue cells, by the impression of dissimilar, reach dissimilar ends: in one instance the product is a fibrous growth; in another bone; in another tubercle; and in another cancer, etc. But it is in very few of these new-formations, no matter at what period of growth they may be observed, that we are able to discover the relations of adaptation sought to be established by them, the external stimuli and the organ in which the new-formation has occurred. Our scientific knowledge of so necessarily complicated a subject is not yet complete enough to afford any conception, in many instances, of even the attempted adaptation, or of the numerous disturbing influences that may cause the new growth to depart from its designed typical course. Much less have we at present understood the causes of the monstrous departure from the line of conservative adaptation observed in cancers. Yet I hope we are now prepared to throw some little light upon this waste of obscurity, that may possibly show a new path indicating the direction in which, if ever, the truth is to be found.

In accordance with the principles now laid down, let us here attempt to trace the origin and history of cancer as it appears in what was previously a perfectly healthy uterus. We must bear in mind that the womb is, structurally, a very complex organ; its functions, too, are complicated and periodical. In early life, and until the puberic age, the uterus is small, not very vascular, and receives little blood. In this condition its structure is *adapted to idleness.* No function is required of it; and it is seldom or never at this period affected with disease.

At the age of puberty the changes, that in the natural order of things take place, are well known. By the natural development of its histological elements, guided by the impression of natural stimuli, the organ undergoes a structural modification, within the limits of a certain type, by which it finally reaches the normal standard of a healthy full grown uterus. It is now no longer dormant and adapted to idleness: the modifications of structure incident to puberty are designed to, and do, *adapt the womb to the natural function of child-bearing.* Histologically the organ will now present to the microscopist a different appearance from that of the immature uterus. Coincidently with this new adaptation of the womb, germ cells are discharged by the ovaries; and the female becomes more beautiful, so as to attract the male, etc.

So far, so good. No unnatural conditions have impressed the womb; it has followed its natural course of development; it has reached the typical standard of maturity. It is fully adapted to perform its designed function. It is free from disease.

But, lo! now an interruption to the strictly natural course of things takes place—at least in the majority of women. The condition of *protracted celibacy* is imposed. The grandly admirable preparation on the part of the womb for the function of reproduction, ends, necessarily, in a feint. Fecundation having been denied, the womb is unable to perform the reproductive office, for which it has been, both functionally and structurally, so perfectly adapted. What in the *most* natural order of things ought to have been a conception, results in menstruation. Usually, unpleasant symptoms accompany the first few of these functional interruptions, but after some months they cease, and menstruation is performed with so little difficulty that the process has gotten to be regarded as a really physiological one.* But the abortive and vicarious process of menstruation becomes in time less and less unpleasant, because the womb that was in the first place *adapted to child-bearing, becomes in time gradually modified, until it is functionally and structurally adapted to menstruation and celibacy.* But *this* womb is now no longer perfectly adapted to child-bearing, and its tissues will not, cannot, be the same, histologically, as those of the uterus in which the menstrual modification has not taken place; though, as far as we know, the microscopists have not yet revealed to us these histological variations.

Now, assuming that this *maid's uterus*, so to speak, has successfully reached the typical standard of a menstruating womb without any serious interruption (such as might have resulted from cold, impaired nutrition, overwork, or any other of the causes already mentioned as being liable to interfere with physiological and pathological development), and remains so, quietly performing its menstrual office for a series of years, let us further suppose another new step to take place in the occurrence of marriage and impregnation.

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* The author regards menstruation as a very salutary process under the circumstances that produce it; but he agrees with the famed Roussel that it cannot be embraced within the strict limits of physiology. Imagine physiological *hemorrhages*, physiological *abortions* (wasted ovules). We cannot.

Here at once arises the difficulty of a uterus thoroughly adapted to celibacy and menstruation having to undergo the changes of structure and function incident to pregnancy, and which was only fitted to be performed by a uterus perfectly adapted to child-bearing. Moreover, the organs of nutrition in the female herself (in fact her whole organism) have undergone modification adapting them to celibacy, and therefore they also, when pregnancy occurs, must be remodified back again to the conditions that fit them for the office of reproduction. Hence it is that unpleasant symptoms accompany pregnancy (especially if the female has been long menstruating and childless), just as they accompanied the first attempts at menstruation, and for the same reason, namely, want of adaptation.

Patiently enough, however, in obedience to the conservative laws governing growth and development, the typical menstruating womb strives, and at length—imperfectly—succeeds in undergoing the modifications necessary for adaptation to reproduction. Histologically *this* womb will now differ from the menstruating womb, and from the just-developed unimpregnated womb of puberty; as also from the impregnated, puberic, but ante-menstruating uterus; for it cannot so completely get rid of its menstrual modification as to prevent that change giving a *caste* to the subsequent ones that occur in the uterus as a consequence of gestation.

Thus far, then, *one* uterus—the fictitious one whose structural history we aim to guide into the development of cancer—has deviated two degrees from the typical formation of perfect health, viz.: first, it became adapted to menstruation; and, second, remodeled back again to the structural condition suited to child-bearing; traces of the first modification remaining and embarrassing the second one. But it has by no means yet undergone a sufficient number of partial and complete structural changes as to reach the *histological wilderness of heterologous and hybrid elements constituting cancer.* But let us go on.

One uterus may, by means of its conservative change, still be able to complete the office of reproduction, and at the termination of gestation undergo the strictly normal retrogressive modification of subinvolution; but this latter must be in some sort also embarrassed by the remnants of structural modification that had occurred prior to pregnancy, for it will be doubtful whether the uterus at the completion of subinvolution will have reached the histological *status* of a menstruating womb or of a child-bearing one; most likely a hybrid between the two.

But in order to hasten the histological history of the organ more rapidly, or at least more surely to the fate of cancerous growth, let us suppose that instead of carrying the ovum to full term, abortion takes place. Then before menstruation recurs, let us suppose (what is not unlikely) the occurrence of a second pregnancy and a second abortion, then a third and a fourth. The womb has now become an *aborting womb.* Its *habit* of aborting indicates that the organ has undergone yet another structural modification adapting it to the anomalous function of abortion. Histologically it will now differ still more from the original type of a normal child-bearing womb. Add the histological products of inflammatory action, so apt to occur under such circumstances, and the variations of type will have already become so numerous and complex that we can hardly follow them. The structure of the womb, even now, viewed histologically, can be nothing else than of an anomalous—a bastard character. Still, no cancer is developed. But we proceed.

The woman becomes a widow. No impregnation occurring for a series of years, the uterus, still impelled by the conservative laws that enforce adaptation of structure to function and surrounding media, again strives to reach the typical standard of a menstruating womb. In doing so the process is greatly belabored by the remains of the several semi-formations that have been partially developed as the result of the vicissitudes of function already noted. Still, in course of years, a sort of *quasi* adaptation is obtained. Histologically, *this* womb will be still more complex, still further removed from any typical standard. Under the most auspicious circumstances, or any, the best of treatment, it can never be resolved again to the condition of a perfectly healthy womb. Yet in time menstruation may be performed with tolerable ease, and if the female is fortunate enough to be ignorant of the inflammatory changes that have occurred—if, forgetting what health *was*, she is contented to be diseased—and thus escapes the caustic, pessary, and bistoury of the gynæcologist, the belabored womb may attain a histological equanimity that might continue until the organ reached the age of functional rest, and then *possibly* finish its history without cancer.

But the history of "our womb" must be less fortunate. The widow marries again. Again impregnation occurs. Pregnancy may go to the full term, or a second series of abortions may take place, together with the occurrence of additional inflammatory products. But this time the succession of functional and secondarily structural vacillations takes place, not in an organ possessing the pristine integrity and simpler histological composition of unimpaired physiological growth, but in one that has already been subjected to the same kind of functional vicissitudes during former years. Hence the histological character of the uterine tissue must be more and more complex, more and more of a hybrid character, and further and further removed from resembling any normally developed tissue. Since the development of the new formation cells (connective tissue corpuscles) have not been permitted to reach their designed conservative termination, they appear as incomplete, half-grown, bastard cells; and since the designed new formations attempted have been many in number and varied in kind, so the half-grown cells of the new structures are strikingly dissimilar, heterogeneous and heterologous.

Surely this tortured uterus, swayed from one conservative modification to another, and another, and another—no one becoming complete, from lack of time, from inconstancy of surrounding conditions, and from the embarrassment occasioned by the half-completed remains of previously attempted modifications—can retain no typical form, can reach adaptation to no typical function, can present no evidence of conservative modification, and can display no typical histological elements.

Yet cancer is not suspected in it; nor expected. The womb is harder and larger than natural; there is perhaps thickening of its walls, enlargement of the os and cervix, with increase of the follicular secretion. The physician diagnoses chronic inflammation, cervical and corporeal endometritis, "areolar hyperplasia," etc. Yet this womb is on the very confines of cancer, and so it remains, perhaps for years; yet in time the climacteric period arrives; our case reaches the age of 45 or 50 years.

And now arises the necessity of another functional, and yet another structural conservative modification. The womb after having undergone the numerous abortive variations of structure already enumerated, and with the substance of its tissues crammed with anomalous, hybrid, heterogeneous and heterologous cells, resulting from such uncompleted organic formations—loaded too, with the products of chronic inflammation: this womb has now to undertake yet another change; it must become once more a non-menstruating womb; it must again reach a histological formation, adapting it to idleness instead of function. It must approach again in some degree the nature of an ante-puberic womb.

If the uterus whose histological history we have thus endeavored to trace, can *now* escape cancer, it would be almost miraculous. In fact the womb is already cancerous. For years past the half-developed, bastard, heterogeneous cells characteristic of malignant growths, have been lying more or less dormant in the uterine tissues. But few additional stimuli are necessary to insure their further and rapid development into scirrhous tumors, ulcerative carcinoma, cauliflower excrescence, or some other of the several forms of cancer embraced under surgical nomenclature.

Potent among these additional stimuli may be mentioned, *first*, the local influence of chemical or mechanical irritants; and, *second*, the supply to the dormant cancer germs of an increase of nutritive pabulum (blood) to foster their further growth.

Both these conditions obtain toward the "change of life:" indeed, one of them, viz.: the application of chemical and mechanical irritants, has most likely been exerting its influence during a series of years while the uterus has been under treatment for chronic inflammatory affections. Caustics, pessaries, sounds, tents, tampons, astringents, leeches, bistouries, iodine, and in fact an almost endless category of local irritants are successively applied to the os and cervix uteri (that part of the organ, consequently, in which cancer most often begins) under such circumstances; nor should we altogether exclude from the list the frequent mechanical irritation of an unusually large penis during *coitu*, when impelled, as it often is, with some violence, against an engorged or inflamed cervix uteri, prolapsed perhaps within an inch or two of the pudenda.

The—as it were—hybernating hybrid germ cells of the "hyperplased" womb find a second condition favorable to their rapid development into unmistakable cancer in the (now surplus) blood sent to the uterus that was formerly appropriated to, or at least discharged by menstruation.

Before puberty, the arteries (uterine and ovarian) supplying the womb with blood, were small, just like the pulmonary arteries of the fœtus are before birth; and it is no doubt one of the numerous natural changes incident to the "critical period," or succeeding it, that the arteries of supply should be reduced in calibre to something like they were before the age of puberty. If there is not such a reduction, the inactive womb of the post-critical period may receive as much blood as when it was in the performance of active function. But this blood, since it can neither be expended in reproduction or menstruation, will be, no doubt, appropriated by the uterus (or its cells) to further the growth of any unfinished new-formations that may have been begun in it.

Now the uterus whose history is in accordance with what we have described, cannot at the critical age remodel either the calibre of its arteries or any other of its parts, near so readily as one whose histological and functional career has been more within the normal limits. Hence at the critical epoch, and subsequently, it will continue to receive an undue supply of blood, thus furnishing the means by which dormant cancer-cells may develop rapidly into the unmasked malignant growth.

Having now traced the histological life of the uterus through a series of functional and formative vacillations that have at last, though by successive gradations, brought the tissual elements of the organ into a hybrid, half-developed, heterologous and heterogeneous form, really constituting cancer, we naturally recur to the interrogatory: What purpose of adaptation is accomplished by this, now, cancerous formation? Or, if there is no conservative utility in the structure, how do we account for (or excuse) the absence of that quality?

The first question we answer in the negative: the cancerous formation serves no conservative purpose.

The answer to the second interrogatory—in strict accordance with the ideas already laid down—is quite easy. We reach it thus: Suppose the blastodermic cells in the embryo of a frog, to be subjected during a short part of the early period of their development to the conditions ("formative stimuli") naturally necessary to conduct the embryo through its prescribed designed course to a full-developed animal—a frog. Then, instead of permitting the same conditions to continue, stop them, and surround the embryo with new conditions such as are natural only to the development of embryonic fishes. After these have been continued some time, change them again by restoring the embryo to the conditions natural for embryonic frogs. Another short period having elapsed, let the growing germ be subjected to a different set of formative stimuli proper only for embryonic turtles. In time exchange these or the conditions natural for the development of embryonic snakes. So go on, throughout the entire embryonic life of the growing animal; let formation, by the constant changing of external stimuli, be made to vacillate irregularly and frequently between frog, fish, turtle, and snake.

Now, assuming that the degree and variety of the changing conditions have not actually destroyed the life of the embryo, what would it come to at last? Would it ever be a perfect frog, or perfect fish, turtle, or snake? Should we discover at any time during or at the end of its devolopment that perfect conservative adaptation to surrounding media observed in the completely developed embryos of animals that have been *constantly* subjected, during embryonic life, only to *one* set of *natural* external conditions? Emphatically not. On the contrary, the resulting organism could be no other than a hybrid monster—half frog, part fish, part turtle, and part snake; *microscopically* it would be seen composed of heterologous, heterogeneous, incompletely developed hybrid cells; *microscopally* it would appear as a physiological (technically pathological) abortion, not fitted to fulfil any conservative purpose of adaptation to surrounding media, such as is always observed to be fulfilled in animals whose natural course of development has not been interfered with by vacillations (in kind) of the surrounding media, or other causes.

But let us not forget that, all along, the variations in structure that followed and were caused by variations in the surrounding media, were really, in each case, *conservative attempts* to modify structure for the purposes of adaptation to modified media.

Exactly analogous to this is the history of the hybrid pathological monstrosity—uterine cancer. The structure of the womb was first developed with a perfect adaptation to child-bearing. Then (as we have described) it was subjected to the conditions ("formative stimuli") that necessitated adaptation to menstruation and celibacy. Then occurred another change of circumstances, and a corresponding change of structure, back again to the condition of celibacy. Later, the conditions underwent a further alteration; the womb became an aborting womb. Still later, adaptation to menstruation was once more required. Finally, yet another structural remodelling, adapting the organ to complete cessation of function was necessary. In the meantime the uterus was injuriously influenced during its attempted conservative modifications, perhaps by congestion or inflammation, due to vicissitudes of temperature, or by impaired nutrition of the whole organism, from overwork, indigestible food, the simultaneous occurrence of pathological modifications in other organs, etc.—just the circumstances that interfere with, or completely stop the development of organs undergoing embryological growth.

Now, under such circumstances, what will the uterus come to at last? Will it ever be a perfect menstruating uterus; a perfect child-bearing uterus; a perfect aborting uterus; or a perfect functionless one? Shall we discover in it, at any time during or at the end of its pathological development, that perfect conservative adaptation to function and surrounding media observed in the completed pathological modifications of organs that have been *continuously* subjected only to *one* set of new external conditions? Emphatically not. On the contrary, the resulting organ—the modified uterus—the new-formation—can be no other than a hybrid monstrosity; in part a menstruating womb; in part a child-bearing one; in part an aborting womb; in part a functionless one. *Microscopically* it will be seen composed of heterologous, heterogeneous, incompletely developed, hybrid cells; *microscopically* it will appear as a pathological abortion not fitted to fulfill any conservative purpose of adaptation to surrounding media, (to new function) such as is always observed to obtain in organs whose typical course of pathological development has not been interfered with by vacillations of the surrounding conditions, or by other disturbing causes.

But let us not forget that, all along, the variations in structure that followed and were caused by preceding and corresponding variations in the surrounding media (altered functions) were really in each case *conservative* ATTEMPTS *to modify structure for the purpose of adaptation to modified media.*

Cancer, therefore, is just as surely the result of conservative *design* in Nature, as any other pathological or even physiological growth. The reactive powers implanted in the affected (cancerous) organ, by virtue of which, when it is impressed by special formative stimuli, special new-formations arise, are in every way good; the laws governing them and determining the resulting product, are eminently benign. The cancerous growth is not a conservative termination of the pathological new-formation, because the latter has been tampered with during its evolution. The formative stimuli have been constantly changing; they have been considerable in number, and different in character; and the resulting new-formation has therefore been made to vacillate between so many different types of structure, without having been permitted thoroughly to complete any one of them, that the conservative purposes of Nature have been thwarted, the formative powers of the organ weakened, and the resulting product instead of having a definite form adapted to a definite single purpose, is good for nothing; it is an anomalous, half-and-half, hybrid product—a "jack of all trades and good at none."

To crystallize what has now been said into a somewhat more definite form, we may announce for the basis of a better understanding as to the nature and origin of cancer, the following propositions:—

First.—Primary cancer is always of *local* origin; it is not due to a dyscrasia, or to poison in the blood.

Second.—Cancer is not a *specific* disease. That is to say, though different from benign growths, it cannot be separated from them by any distinct line of demarcation; between the most malignant and the most benign growths there are intermediate structures that are neither one thing nor the other.

Third.—Cancerous formations — like physiological and benign pathological ones—result from the organ in which they occur attempting to modify its structures, so as to be adapted to new functions it has been called upon to perform, required by new external conditions that have been brought to act upon it.

Fourth.—Cancer cannot originate *directly* in physiological tissues, having a normally typically histological composition (with perhaps an exception noted in proposition 6); nor can it arise *directly* in typically-formed pathological tissues that have a homologous histological structure. The transition from homologous and homogeneous (benign) tissues into heterologous and heterogeneous (malignant) ones must be through a series of successive gradations.

Fifth.—The main factors that convert a benign tissue into a malignant one, are: (*a*) the *simultaneous* impression on the affected part of a multiplication of different formative stimuli, each tending to develop its own special conservative variation of structure; (*b*) the *successive* temporary impression on the part of a number of different formative stimuli, one at a time, the influence of no single stimulus being continued a sufficient length of time to permit the special formation it tends to develop to reach completion; and each succeeding new stimulus following the preceding one so soon as not to allow of the removal of the products resulting from the impression of the stimulus that was first brought into play; (*c*) the *alternate* temporary impression on the part of two or more different formative stimuli, especially if the alternations are rapid; (*d*) the influence of these factors will be intensified when they are brought to play upon organs that are simultaneously undergoing the tissue changes incident to strictly physiological development, as upon the womb during the "critical period;" (*e*) the direct and simultaneous impression on the part—with any or all of the above—of mechanical or chemical agents (hence the mouth and neck of the womb are more liable to cancer than the body).

Sixth.—The constant or frequently repeated temporary impression of a *single* formative stimulus *may* develop cancer, if it (the stimulus) is of such an anomalous or foreign kind as that it tends to develop a modification of structure for which there exists no analogue in man or in the natural formation of other animals; instance cancer of the tongue from the frequent application of nicotine in smoking rank tobacco-pipes.

Seventh.—For evident reasons in accordance with the foregoing premises, cancer will occur most frequently in organs whose normal structure is complicated and unstable, and whose natural functions are complex in character, varied in kind, and periodical in occurrence; instance the uterus, the breasts, the stomach.

Eighth.—The liability to cancer increases with age (generally speaking), for the reason that time is thus afforded for the factors mentioned in proposition 5 to be brought into play.

Ninth.—The treatment of cancer is either preventive or curative. To prevent its development, avoid the impression of the several factors already indicated. To cure the patient by radical means when cancer is developed, we must either destroy the life of the histological elements composing it, for which at present science has provided no adequate means; or starve out the growth by cutting off its nutrient supply, as by the obliteration of its nutrient arteries, or extract completely the diseased organ. For cancer of the uterus get out the womb—get it out *soon.*

In conclusion, speaking figuratively, cancer is like the twig that naturally intended to grow in a perpendicular direction, until reaching the towering height of a vertical oak, it becomes, by being bent first to the right, then to the left, then laterally again and again, a crooked, knotted, and irregular dwarf. The evolutionary nature of the cancerous organ has, so to speak, been lashed into a pathological fury—goaded to madness—tortured into suicide: like the teased viper, it turns to bite itself with the identical fang naturally designed for its own preservation. Just as a shell, fired at an enemy in a direct line, by unluckily impinging upon a succession of oblique surfaces, may eventually describe a circle and return to burst in the face of the gunner himself: it was fired with the same conservative design of self-preservation, nevertheless.

CLINICAL REPORTS.

CLINICAL LECTURE

ON THE

DISEASES OF WOMEN,*

By T. GAILLARD THOMAS, M.D., *Prof. of Obstetrics and the Diseases of Women and Children, in the College of Physicians and Surgeons, New York.*

CASE OF MENORRHAGIA.

Mrs. D., aged 17, married. Has had a flowing every month since a miscarriage which occurred five months ago; being then in the third month of pregnancy. Previous to her miscarriage was perfectly well. Ever since her miscarriage she has suffered from menorrhagia, and comes to be treated for that difficulty. There is nothing more which the woman presents in the way of symptoms. The menorrhagia is quite excessive, but not sufficient to keep her in bed, though far in excess of the ordinary loss of blood at her menstrual periods previous to her miscarriage.

Physical Exploration.—The uterus being touched, is found to be in its normal position; and conjoined manipulation shows it to be of normal size, and in proper position. Above the ovaries there is nothing noticeable. We have as yet nothing to account for the menorrhagia. The position of the woman is now changed, and a speculum introduced. The uterine sound is introduced, and the wall of the uterine cavity is touched, and instantly a free flow of blood comes from the uterus. Menstruation is not present, nor is it near the menstrual epoch, so that the flow cannot depend upon that. But does not blood flow freely from the uterus when its walls are touched? It does not. In a healthy uterus no blood will be discharged when its inner surface is touched, or at most a drop. But here a flow of blood takes place. There is no ulceration about the uterus; nothing wrong about the cervix, or the cervical canal. The menorrhagia is all there is; and what is the cause of the menorrhagia? To speak in full of the causes of menorrhagia, and the method of examination, would occupy the whole of the hour, for there are a great many causes for menorrhagia.

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* Phonographically reported for the Journal by Wesley Carpenter, M. D.

A woman may have carcinoma uteri and have menorrhagia; may have a retroverted uterus, and have menorrhagia; have a granular ulcer of the os, and have menorrhagia; and so menorrhagia may be a symptom of a great many diseases of the uterus; and when you meet with a case of menorrhagia in practice it will annoy you very much, unless it is cured. A patient afflicted with dyspepsia may receive treatment at your hands, and not know whether she is cured or not; but a patient who suffers from menorrhagia *knows* whether she is cured or not, and unless you succeed in curing her, will give you a great deal of trouble.

The only method of curing this disease is to find out what the cause of it is, and cure that. I come now to speak of the etiology of this case. During utero-gestation, the mucous membrane of the organ is developed very much in excess of what is present in the unimpregnated condition. After the emptying of the cavity, this tissue undergoes certain changes, and it is cast off; it molts, as it were, and the wall of the uterus is returned to its normal condition. When this does not properly take place, the wall of the uterus may be covered over with little warty growths, or fungoid excrescences. This condition may follow abortion, and sometimes full labor. These little growths give rise to the most persistent form of menorrhagia, except malignant growths in the uterus. Make your diagnosis, and you may cure this most persistent form of the disease. The diagnosis and treatment is to be effected by means of an instrument invented by the reviver of the use of the speculum. Récamier, in 1820, invented the curette. That which I employ, consists of a loop of copper wire attached to a handle. The wire can be bent to any angle desired, hence can receive any curve desired for entering the cavity of the uterus. To test for the existence of these growths, place your patient in the position for the introduction of the speculum, and, introducing the instrument, draw out some of the growths by gently scraping the walls of the uterus. Be careful in the application of the instrument, and you will draw out twelve or fourteen of the growths, as large, perhaps, as a pea. Place them in water, and they will separate from the mucus with which they are covered, and then can be examined.

Your diagnosis being made, the treatment consists in the removal of these growths, by the same careful scraping manipulation with the curette. This is the most satisfactory plan of treatment. Another plan of treatment is to wrap about an inch and a half of the extremity of a probe, curved properly for introduction into the cavity of the uterus, firmly with a pledget of cotton, and with this apply the tincture iodini or tincture iodini co., all over the walls of the cavity. Cutting-curettes, used by some, are dangerous. Peritonitis may follow their use, and is not very uncommon. I employ the cutting instrument freely upon the os, and in the cervical canal, but never in the cavity of the uterus.

CASE OF AMENORRHŒA.

Miss ———, aged 18; has been sick three years. Her chief complaint, she says, has been salt-rheum; and for this she has been doctoring. Since that time, she says, she has had "inflammation of the womb." The doctors, she says, have told her that this was her disease. All this time she has complained of steady headache on the top of the head and over the eyes; pain across the abdomen; no appetite; pain around the heart; has not had her periods for the last three months; that is all. She became regular at the age of fifteen; but during the last two years she has been two, three, and four months at a time without menstruating. During the last eight or ten months she has had these headaches; and she also has partial loss of power of motion on the left side of the face. She is also, as you see, quite pale. This completes the history of the case; and now let us note its important points, and the instruction which it gives us. The probability is, that this *partial amenorrhœa*, which occurs at different times, is the cause of the following symptoms: *First*, headache, and neuralgia over the eyes; *second*, that condition of the facial nerves which gives partial loss of power in the left side, and that condition of paleness. But in addition to all the symptoms mentioned, I have found the following: She is sick at the stomach every day—about the middle of the day; "the breasts get all full of pimples," as she says; they are tender to the touch; sometimes she vomits her food; in other words, she has many of the symptoms of pregnancy, but the uterus is found to be perfectly normal in size, and a sound passes to the fundus with the most perfect freedom.

The thing to be insisted upon is this; that this girl is not pregnant, although she has nearly all the symptoms of pregnancy. Raciborski wrote, several years ago, concerning the development of all the symptoms of early pregnancy, by the influence of mental emotion; and this is the case with this girl. The absence of the menstrual symptoms commonly produce gastric disturbances. In this case the chief symptoms of pregnancy exist, but there is no pregnancy. What is the cause of the non-performance of the functions of the uterus? This patient is pale; the pulse is rapid, and if you listen over the cardiac region, you will hear a blowing murmur at the base of the heart. This is a condition which is called *chlorosis*. It is, perhaps, dependent upon, certainly connected with, a deranged condition of the nervous system. Impoverished blood, and a deranged condition of the nervous system, are two essential elements in the consideration of this case.

Prognosis.—This is the particular form which yields to treatment. The condition of the blood and the nervous system are the two things to be treated.

Method of Treatment.—This girl should have a nutritious diet; some fatty food; and I have always found cod-liver oil to be not easily appropriated in a chlorotic patient. Cream is much better, given in the form of cream-punch, which consists of brandy, sugar, and cream. Encourage the patient to eat rare-cooked meats. Bitter tonics, not for the purpose of restoring the patient's strength, but to stimulate the desire for food. For this condition of the nervous system, the arsenical preparations, in small doses, are the best. Fowler's solution is one of the very best; and given in two-drop doses, three times a day, is an admirable tonic for the nervous system, and may be continued in these doses for one or two years. I mention, iron last because I believe it to be the least serviceable. In anæmia, iron is just the remedy, because the blood simply needs the elements it contains. In this case the disease is of a nervous character, and the condition of the blood is a result. When iron is given, I combine it with the bitter tonics. A favorable prescription is the following:

℞. Tr. Columbo, ℥ss.
Tr. Ferri Muriatis, gtts. x.
Liquor Potassæ arsenitis, gtts. ij. M.

Such a dose may be given three times a day. In addition, I would in the present case stimulate the uterus to act by the use of the uterine sound passed to the fundus. A weak current of electricity may be used also, by placing one pole of the battery over the spine, and the other over one ovary, and then over the other.

CASE OF ANTEVERSION.

Mrs. W——, age 29; married three years; had one child two years ago. She took a slight cold after parturition, but recovered, and was quite well until five months ago. Then she was taken with pain and swelling over the symphysis, leucorrhœa, involuntary passing of urine, lumbar pain, and headache. Menstruation is regular. The symptoms all point to the uterus as the cause of her suffering.

Examination shows a hard ridge running up from the anterior lip almost to the symphysis. The uterus measures three inches. There is anteversion. The displacement interferes with the small intestines in front and the rectum behind, impeding peristalsis. The walls of the bladder are pressed together, and against the symphysis by the uterus, causing the fixed pain of which she complains. The urine is forced out of the bladder by the weight of the uterus. Cephalalgia is common in anteversion, also *pain in both eye balls.*

The causes of anteversion are:—

1. Great weight of the clothing compressing the waist and pushing the intestines downwards. 2. Lifting heavy weights. 3. Increased weight of the uterus.

As to treatment, more marked and certain relief can be given in anteversion than in any other uterine displacement. In every such case there is congestion, hyperæsthesia, etc. First, empty the bowels, put the patient in bed for a week, inject hot water (100°) for fifteen minutes three times a day into the vagina; this relieves the sensitiveness. Then use a support, if it can be borne; if not, pack the space between the cervix and the anterior wall of the vagina with cotton boiled in a solution of soda, dried, and then moistened with carbolized glycyrrhine, and leave the tampon in place three days. This process may be continued a week; then use a modification (Thomas's) of Cutter's pessary, which is to be removed every evening. The patient is to lie on her back; afterwards use the anteversion pessary.

INTERSTITIAL FIBROUS TUMOR.

Mary Mc——, age 38; married; has had six children, the last six years ago. For four years she has suffered at her menstrual periods from pain that generally lasted two days and nights. The quantity of menstrual blood is three or four times as much as natural; after the cessation she is left very weak. She has leucorrhœa all through the month. Soon after the birth of her last child she had a "weighty-pain" in the abdomen, and a flow of blood after bearing her child. She has dysuria, and is anæmic and cachectic.

Examination shows a hardness of the cervix, and a solid tumor in the muscular tissue of the uterus, called "mural" or "interstitial." This fibrous tumor is nourished by an artery nearly as large as the radial, has a peculiar and unusual stink, and is probably sacculated. In two or three years the patient will reach the menopause, when the hemorrhage will cease. If she can be kept along until that time, she will then begin to increase in strength, and the tumor will not cause her great inconvenience. The three forms of such tumors are the following: the FIBROUS POLYPUS, which causes violent hemorrhage, and is most amenable to treatment; the MURAL, which enlarges the uterus and increases its mucous surface, and therefore causes congestion and hemorrhage; and the SUB-PERITONEAL, which does little harm.

To stop the hemorrhage she should be confined to the bed at her menstrual periods, and cotton, saturated with ferri persulph., should be introduced into the uterus every day while the flow lasts. Hemostatics may be given internally; mechanical support cannot be employed here. Between her periods she should have good nourishment and tonics.

EPITHELIOMA UTERI.

Mrs. C——, age 41; a widow; has had eleven children, the last sixteen years ago. She was quite well until the last thirteen years. Then menstruation began to be profuse, and between the periods a leucorrhœa appeared six years ago; the latter discharge became tinged with blood, thicker, and like "corruption." At present she has hemorrhage every three or four weeks, and in the interval a bloody sanious discharge, but no pain. Formerly her weight was 174 lbs.; now it is 140. One year ago she ceased to menstruate regularly, but every three or four weeks she would have hemorrhage, and lose more in one day than in a whole period.

On examination the posterior lip of the cervix can hardly be felt, but a hard nodular mass is distinguished in a somewhat sloughing condition. There is no proliferation of cells here, but a loss of tissue, for it is now in the ulcerative stage. Carcinoma uteri could not have existed this way thirteen years. The symptoms are those of epithelioma: namely, a profuse watery flow at times; no pain; rectum and bladder not involved, as they would have been in two years if it were carcinoma, producing incontinence of urine and fæces; she is still in a good degree of health. No operation can be performed in this case; we can only treat her symptoms. Carbolic acid, given externally and internally, was once supposed to be a cure, and did cure one of Dr. Burroughs' cases. Acetic acid injected into the mass was also supposed to cure by destroying the cancer-cells, but it is a failure. Give good nourishment and tonics, check the hemorrhage by ferri persulph. introduced on cotton into the cavity of the uterus. Inject a solution of carbolic acid twice daily into the vagina. The actual cautery would not be safe in this case, as the disease is so near the peritoneum.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

REPORTED BY CHAS. S. WARD, M.D., SECRETARY.

STATED MEETING OF OCTOBER 2, 1872. DR. J C. NOTT, PRESIDENT, IN THE CHAIR.

RUPTURE OF OVARIAN CYST AS A CAUSE OF DEATH.

DR. POOLEY presented an ovarian cyst which was removed from a child aged three years and two months, who died from peritonitis, the result of rupture of the cyst.

The specimen was referred to Dr. Peaslee for examination and report.

DR. PEASLEE remarked that ovarian tumors may exist in the new-born child. A case of ovariotomy at the age of three years has been reported; the operation, however, was followed by death of the child. The youngest reported successful case was upon a child aged six years and eight months; the first being a patient of Mr. Alcott (*The Lancet*, Feb. 1872), and the second, of Dr. W. B. Barker (*Phil. Med. Times*, November 1, 1871).

CONGENITAL IMPERFORATE COLON.

DR. B. F. DAWSON exhibited the colon of a child who died of collapse, the result of perforation occurring on the fourth day after birth. The child was healthy and vigorous at birth, and did well until the second day, when it was noticed that there had been no evacuation of meconium. The physician thereupon ordered a dose of castor-oil, the only effect of which was to occasion much pain and some vomiting; another dose then being administered was soon followed by vomiting of meconium. On the fourth day Dr. Dawson saw the child, and, from a careful examination, decided that it was a case of imperforate bowel, and proposed to operate; the child, however, became suddenly collapsed, and died three hours after. The autopsy was made a few hours later. The abdomen was tumid, and the cavity contained a large amount of meconium. The transverse colon, which was found distended as large as the stomach, was gangrenous, and at a point at its central portion was wholly impervious. Below this point, the colon and rectum were pervious, but in a fœtal state, containing nothing but mucus. On further search, a perforation was found in the transverse colon, through which the contents had escaped into the peritoneal cavity. Dr. Dawson remarked that he thought it probable that an intra-uterine peritonitis had occasioned the obliteration found, lymph having been exuded, which subsequently occasioned the imperforation by contraction. Dr. Dawson was unable to substantiate his belief, as such objection was made to the autopsy by the parents as to forbid thoroughness.

Dr. Pooley remarked that children have lived two weeks with imperforation.

ENUCLEATION OF UTERINE FIBROIDS.

Dr. Thomas exhibited a mass the size of a cocoanut, consisting of three fibroids which he had recently removed by enucleation. The woman, who was a patient of Dr. H. Moeller, had suffered for some months from excessive menorrhagia. When seen by Dr. Thomas, the uterus was found to be as large as at the fifth month of gestation; the cervix was found well dilated, and a large fibroid presenting, which, on examination, proved to be sessile, and attached posteriorly. The patient lying upon her back upon a table, Dr. Thomas proceeded to enucleate by cutting through the capsule of the tumor with scissors, and then insinuating a grooved steel sound under the capsule, which he separated as far as possible from its attachments. Traction was then resorted to, combined with powerful expression from above, which resulted in the extrusion of a large mass in about forty minutes; another mass was felt above the one extracted, which was in like manner removed; traction then being made upon the capsule, it came away, having attached to it a still smaller tumor. There was very little hemorrhage. Opiates were given, and intra-uterine injections of carbolic acid were daily used. The patient did well for four weeks, though she now has a mild attack of phlegmasia dolens, from which she has suffered once before as a sequel to parturition. This is the sixth case in which Dr. Thomas has resorted to enucleation, in all of which the recovery has been perfect. He has, however, lost two cases in the preparatory treatment by sponge-tents. Dr. Thomas considers the operation in its results more formidable than ovariotomy.

Dr. Peaslee agreed with Dr. Thomas in the operation being more dangerous than ovariotomy, though it looks so simple. It is always dangerous to operate while the tumor is in the uterus, though where danger exists from menorrhagia the operation is perfectly justifiable.

Dr. Sims thought the removal would be facilitated by the patient being in the left lateral semi-prone position, and instanced a case where he had effected the removal of a tumor in twelve minutes.

Dr. Thomas, in reply, said that he had removed tumors in less time than that mentioned by Dr. Sims, and he considers the dorsal position better, as expression can be so efficiently brought to bear.

CAUSE OF DEATH AFTER OPERATIONS.

Dr. Sims, in speaking of death resulting from the use of sponge-tents, and after ovariotomy, said he did not see why a little effusion of lymph into the peritoneal cavity should occasion death.

Dr. Noeggerath said, in cases where patients die from pelvic peritonitis, it is not the lymph, or the amount of lymph exuded, as many die where only a little exudation is discoverable; it is not the amount of inflammation or exudation, but the peculiar reflex irritability of the nervous system in some persons, in which the slightest amount of foreign matter in the peritoneal cavity is sufficient to occasion death. He instanced the case of a healthy young girl, who, while standing by the fire in the evening, received a fright, and was immediately seized with severe abdominal pain; the following morning she died. On post-mortem examination only a superficial development of the vessels was found, and but a little bloody serum and lymph, which had escaped from the Fallopian tubes, which were found to be full of the above-mentioned product. Sometimes the exudation of enormous amounts of lymph does not occasion death. Dr. Noeggerath has lost cases from the use of sponge-tents, the initial cause being a lymphangitis which extended to the peritoneum.

Dr. Sims remarked that in some cases of peritonitis following ovariotomy, large masses of lymph are exuded; but the lymph is not the dangerous element; they do not die from the lymph, but from the extravasation of bloody serum, the absorption of which results in septicæmia, which may kill the patient in twelve hours after the operation.

Dr. Noeggerath did not coincide with Dr. Sims, as it is absolutely impossible for death to take place from septicæmia, the result of the absorption of fluid which had been effused at the time of an operation only a few hours previously; there certainly is nothing in blood or serum which would produce septicæmia or reabsorption within so short a time. Septicæmia kills only under two circumstances: first, where so much septic material is absorbed as to occasion death of itself; and, secondly, where it kills by producing secondary inflammation of important organs. Septicæmia rarely occurs in less than four or five days, and peritonitis could not result from septicæmia within twelve hours after the operation. Dr. Noeggerath thinks it will perhaps be proved that septicæmia results from the entrance of bacteria into the blood, as in some cases of phlebitis.

Dr. Sims said in all of the cases of death after ovariotomy in Mr. Spencer Wells's practice, there was found a sero-purulent fluid in the abdominal cavity. It is not the lymph, but probably the absorption of a little decomposed lymph, which occasions the death. He instanced the case of Mr. Spencer Wells, who pricked his finger at an autopsy, following which he had a chill and fever. Mr. Wells remarked that if the entrance of so little poison produced so much constitutional irritation in himself, the women must naturally be exposed to extraordinary risks.

Dr. Noeggerath said the cases were not parallel, as in Mr. Spencer Wells's case it was the fluid from a dead body which he introduced into his system.

Dr. Thomas remarked that he was not aware that any one ever claimed that the lymph had anything to do with the death from peritonitis; it is rather the effect of the disease itself upon the nervous system.

Stated Meeting of November 5, 1872. Dr. Jas. L. Brown, President, in the Chair.

Intussusception in a child.

Dr. Dawson exhibited, through permission of his friend Dr. H. T. Hanks, the entire intestinal canal of a little child, six weeks old, who had died some days previous without the real disease being recognized by the physician, except very shortly before death by Dr. Hanks. The latter having made the post-mortem, found the condition shown in the specimen, which consists of an invagination of the colon, cæcum, and a portion of the duodenum into the rectum, and which are seen bound together by exudation where the peritoneal surfaces are opposed. The invagination undoubtedly in this case had begun at the ileocæcal valve, as that portion was now located against the anal extremity of the rectum. He considered the case rare, from the great extent of the intussusception, and instructive in illustrating an almost inexcusable error in diagnosis.

OVARIOTOMY UNDER BICHLORIDE OF METHYLENE.

Dr. Noeggerath reported three cases of ovariotomy.

The first was a patient thirty-six years old, robust, and the mother of two children. On May 1st, 1871, she first noticed a swelling in the left side, and believed herself pregnant, as there was milk in both breasts. Menses were irregular. The first measurement in September, 1872, gave forty-three inches girth. One large cyst, with smaller ones pointing inside, diagnosticated. September 1, she was tapped, and nine quarts of greenish yellow fluid evacuated, containing albumen, coloring matter of bile, tyrosin. The tumor rapidly refilled, so that, October 21, the measurement was thirty-nine inches, and on October 24, forty-two inches. Ovariotomy was performed at the German Hospital, at three and a half P.M., under effects of the bichloride of methylene given by Dr. B. F. Dawson; during a period of one and a half hours only ʒ viii. were used. The respiration was very quiet, and the pulse, which was 100 at the beginning, soon fell to 80.

There were many points against good recovery. Strong health, great excitement regarding success of operation, north-easterly winds with rain, and considerable hemorrhage during the operation, from the severe and extensive adhesions. The incision was three inches long externally, and but two and a half inches through the peritoneum. The pedicle was made up of the thickened left broad ligament, and was first secured by a clamp. Attempts to exfoliate the cyst from the peritoneum entirely failed. A section below the clamp bled from many points. Liq. ferri subsulph. was of no avail, and though ligatures were passed underneath and around the bleeding points, in several places they did not succeed in controlling hemorrhage. The whole mass was then tied with silk close to the uterus, and left in the pelvis. An opening was made in the cul-de-sac of Douglas to allow of drainage. The dressing consisted of lint soaked in carbolic acid, and straps of adhesive plaster. A large bladder filled with ice was placed on the abdomen. The patient recovered from the anæsthesia fifteen minutes afterwards. There was no nausea; and she suffered no pain until late at night. Suppositories of one grain of aqu. ext. opii. gave relief. Her food consisted of barley gruel and milk.

Oct. 25.—No pain until late in the evening; pulse 124; temp. 38.2 Cent.

Oct. 26.—Restless and feverish; no peritonitis; pulse 160; temp. 38.2; beginning septicæmia; decomposed discharge from wound; quinine gr. ij. and carbolic acid every hour. Large amount of bacterii in discharge and blood; pulse towards evening 135; temp. 38.7.

Oct. 27.—Fever increased towards noon; pulse 153; temp. 39.7. Subcutaneous injection of carbolic acid, two drops every three hours; the pulse, half an hour after injection, fell to 142; temp. 38.7; evening, pulse 133; temp. 39.4.

Oct. 28.—Pulse 130; temp. 39.6; sutures removed and wound healed. Attempt to establish drainage through Douglas' cul-de-sac; did not penetrate from above, on account of the large amount of lymph covering all the organs and filling up the pelvis; there was a large amount of turbid bloody serum discharged from the wound. Night, pulse rose to nearly 145, and was weaker; temp. 39.5; delirious, involuntary discharges from bladder and bowels. Large doses of brandy.

Oct. 30.—Pulse fell through night to 130; temp. 38.4.

Oct. 31.—Towards morning again delirious; in the evening, pulse 120; temp. 39.4.

Quinia and carbolic acid internally and injections of carbolic acid in the canal of wound; since which time there has been a gradual recovery up to Nov. 7th.

CASE 2.—Healthy up to two years and a half ago; one child fifteen years ago; three miscarriages, the last four years ago; menses normal. Two years and a half ago noticed a swelling in the right side which gradually increased. She felt pretty well up to one year ago, when she began to suffer from painful and irregular menstruation. Large immovable polycystic tumor with thick wall, diagnosticated.

Oct. 8.—Attacked with severe pain in left section of tumor, with vomiting and severe fever and chills, repeated every twenty-four hours. An exploring trocar was used, and decomposed pus evacuated; menstruating; patient in hospital died from puerperal phlebitis.

Oct. 27.—The patient had a second attack of the same symptoms. A patient is in the hospital with septicæmia; again menstruating; patient very much run down by these two attacks, and although yet a little feverish, the operation was postponed, indicated by the occurrence of decomposed matter in the cyst.

Oct. 31.—*Operation.* This patient also under the influence of bichloride of methylene given by Dr. Dawson; slept quietly and without nausea. Incision three inches through abdominal walls, 2½ through the peritoneum. Five cysts tapped; partly chocolate-colored liquid, partly pus. Pedicle formed from broad ligament, and tied in two parts with silk, and returned. There was considerable hemorrhage; lower angle of wound left open; some dressing as above; no pain or nausea up to 7 P.M., but the copious and repeated vomiting; ext. opii. per rectum. Tr. iodine internally.

Nov. 1.—Slight pain in abdomen, relieved by suppositories;

great prostration; feverish, pulse 90–100; temp. 38.5 Cent. Repeated vomiting towards evening, which increased towards night; no pain, no symptoms, except from shock at 3 A.M.

Nov. 2.—Pulse up to 120; temp. 38.5 Cent.

Post-mortem, Nov. 2.—3 P.M. Abdomen filled with bloody serum, no lymph exuded, peritoneum not injected.

CASE 3.—Ovariocentesis vaginalis. Patient fifty-nine years old. always healthy; sterile; cessation of menses nine years ago; abdomen swelled since last year, beginning in the left side.

June 27.—Severe abdominal pains which kept her in bed. At time of operation measured seventy-three inches, tumor apparently not a large cyst, with several very small ones. Exploring-needle brought away serum, with traces of albumen and salts of soda; uterus pushed forward and considerably elongated; cyst pressed behind.

Oct. 31.—*Operation.* Bichloride of methylene given by Dr. Dawson produced anæsthesia in a few minutes; the operation lasted twenty minutes; Douglas's cul-de-sac opened with knife; cyst emptied, and drawn down to entrance of vagina, and there attached by silk sutures; no nausea; slept without pain during night.

Nov. 1.—Very little pain; slight discharge; pulse 100.

Nov. 2.—Pain increased; feverish; profuse fetid discharge; injection ordered of carbolic acid in the cyst. It was found that lower end of cyst had retracted high up in vagina; injection was probably made into peritoneal cavity instead of cyst; an attack of fainting, and great prostration immediately followed, and lasted one hour; slept some during the night; little pain until 5 A.M., *Nov.* 3, when it increased, accompanied with considerable vomiting; she died at 12 noon, the first fatal case of this operation. Instead of uniting the edges of wound in sac and vagina by sutures, I tried to simplify the operation by simply pulling down the cyst after incising it, and keeping the lower end outside the vagina. It is not a good proceeding; the cyst collapses, no adhesions are formed as in the old proceeding, with the peritoneal lining of the posterior vaginal roof; air and injections also enter into peritoneal cavity.

Post-mortem, Nov. 4, showed extensive old and fresh adhesions all through peritoneal cavity, and large amount of bloody serum, which did not escape, although there was a large opening for drainage in Douglas's cul-de-sac.

Of these three patients one recovered from a severe attack of septicæmia with large exudations of lymph, and a turbid bloody serum in the lower pelvis. One died of shock, without traces of peritonitis, but there was some extravasation of bloody serum from the two large stumps. The other died of peritonitis, with extensive deposits of lymph and bloody serum.

Dr. Sims remarked that Dr. Noeggerath's cases were very interesting. The recovering case has had septicæmia, and the others had bloody serum and lymph exudation. How was it determined that lymph existed in the case which recovered?

Dr. Noeggerath replied: When he saw the bloody discharge, with symptoms of septicæmia, he tried to pass his finger into the opening, but was able to pass it but one inch.

Dr. Sims replied that patients die invariably from septicæmia after ovariotomy. There must be bloody serum in the pelvic cavity in order to give rise to septicæmia. Patients do not die from peritonitis after ovariotomy.

Dr. Noeggerath replied: The first case proves that they do not die from peritonitis or septicæmia; 2. They die not from peritonitis; there remains then as causes, collapse, as after any wound or fright, or septicæmia. In septicæmia we always find a fermenting matter in the blood which increases the temperature to a very high degree, 36°–40° Cent., with a pulse from 150 to 160. In collapse the temperature is never over 30° Cent., or pulse over 130. The question will never be decided physically until we can prove by the microscope that septic matter exists. The first patient recovered, because lymph was exuded which encircled the pedicle, preventing discharge into the peritoneal cavity; which is just the reverse in the second case, where there was no fibrin exuded, as there was no vital force or reaction.

Dr. Sims said different individuals possess different degrees of resistance to blood poisons. He thinks Dr. Noeggerath's explanation good; the lymph covers the abraded surfaces, and thus absorption is prevented; patients may die if there be but ʒ i. of fluid in the cavity, if there is an absorptive surface.

Dr. Peaslee said one point is settled in regard to septicæmia —no animal fluid absorbed will produce septicæmia unless it be first decomposed. Patients dying from septicæmia must exhibit signs of septicæmia. In regard to bloody serum, he has seen so many cases in which it was abundant, that he does not fear it unless it undergoes decomposition. He would, of course, remove it if he knew of its existence in any case.

REPORT ON DR. SKENE'S PAPER ON "A BRIEF SKETCH OF THE PATHOLOGY OF AREOLAR HYPERPLASIA AND SCLEROSIS UTERI." By the Committee appointed by the New York Obstetrical Society.*

Submitted at the meeting held Dec. 5th, 1872.

E. NOEGGERATH, M.D.,
T. G. THOMAS, M.D.,
JAMES L. BROWN, M.D., } *Committee.*

AFTER a short analysis of the views on chronic metritis, cervical as well as corporeal, in our hand-books of Gynaecology, and referring especially to those brought forward by Dr. Thomas, the author of the paper remarks on page 2d: "I believe that the term hyperplasia should be limited to those diseases in which areolar hyperplasia has occurred from simple hyperæmia;" but, further on, he emphasizes this opinion by saying, "True areolar hyperplasia occurs as the result of long continued hyperæmia, etc."

The question here arises, whether hyperplasia, namely, a growth and development of areolar tissue, a process which at the present time, lacking a better term, may properly be called one of inflammatory nature, does ever occur as the result of hyperæmia. The author does not clearly state whether he considers this series of nutritive alteration, namely, hyperæmia, and hyperplasia in its consequences, equivalent to inflammation or not. Apart from all theoretical reasoning which does not lead to the acceptance of this proposition, it has been demonstrated beyond doubt by the experiments of Bernard, that hyperæmia brought about by disjection of the sympathetic nerve, and if it lasted for weeks and months, does never lead to areolar hypertrophy, no matter to what section of the body the experiment be applied. The parts, though gorged with blood, do never undergo any change of nutrition. It is therefore not the smaller or larger amount of blood which circulates through a certain part of tissue, which constitutes the principal and primary cause of its nutritive alteration. By offering to a territory in the living system a larger amount of nutritive material in the congested vessels, we do not make it accept a larger quantity.

It is not the increase in the amount of blood which supplies a certain district of the body, but rather peculiar conditions which we may call, collectively, irritation, which are apt to modify its affinities to certain constituents of the blood, or else the presence of specific elements in the blood upon which certain tissues or parts of tissues exert a special attraction, in consequence of which the nutrition of the latter becomes modified.

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* Dr. Skene's paper appears in this number.

The reception of material into the elements of tissue is undoubtedly an act belonging to the elements themselves. Until now, at least, not one experiment exists to prove that by an irritation applied to the vessel itself, a proliferation of cells, or an increase in the size of the fibrils, can be produced in the healthy body. Virchow himself has attempted to produce inflammation by inducing congestion, hyperæmia; but he succeeded only to establish all the outward signs of inflammation, increased heat, and reddening of the parts involved, without being able to produce a proliferation of cells or hypertrophy of the tissues.

This general law holds good when applied to changes in the process of nutrition, which take place either in the neck or the body of the uterus.

The views held by Scanzoni and his followers are no longer accepted to the extent that they were about twenty years ago.

It is doubtful whether any one gynæcologist has ever followed up the development of the so-called second stage, where the increase of areolar tissue is fully established, and could trace, clinically, its genesis out of a simple state of hyperæmia of the neck. The common error which was committed, consisted in the method of demonstrating hyperæmia in one patient, and hyperplasia in another, and assuming, by reasons based on prevailing faulty physiological views of the nature and course of inflammation, that the former condition was the precursor of the latter.

Nobody attempts to deny that hyperæmia of the neck as well as of the body does exist, and no one will contradict the statement that areolar hyperplasia does exist with or without hyperæmia. But to consider the coexisting hyperæmia as the primary stage, the cause of the hyperplasia, we cannot admit. If a causæ nescius between the two conditions is to be upheld, we must rather consider it as the consequence than as the cause of areolar development.

The matter considered in this light, goes very far to upset the base of classification in the paper before us.

On page three, the author makes the following statement: "True areolar hyperplasia does not, as a rule, extend to the entire uterine walls."

This opinion collides with the statements of the most trustworthy writers of the present time, and, above all, with those who have thought it worth while to substantiate their statements by post-mortem examinations. We name among them

Virchow, Klob, Braun, and Seiffert. In the experience of the committee, true areolar hyperplasia is not only not limited to the cervix, but does, as a rule, extend to the body of the uterus; though in the limited post-mortem examinations which we have had occasion to make, and which have given occasion to further inquiries by the microscope, we have found that areolar hyperplasia extended in most instances all over the body of the uterus, with few exceptions. If it persists during life occasionally in the neck, while it disappears in the body, this may find its explanation in the presence of a local irritation (hard cicatrix, ulceration), in consequence of which retrogressive metamorphosis was impeded, while it had taken place in the body.

The description of the disease, as far as it concerns the uterine neck, is very satisfactory; we cannot, however, agree with the statement, which reads as follows: "The mucous membrane covering the indurated portion may be, and usually is, highly congested." The very reverse being observed in many cases. On page four, the following statement is made by the author (Vorzulesen):—"We have to raise, in this instance, the same objection which we applied to the Doctor's views regarding areolar hyperplasia of the neck, as resulting from hyperæmia, with this reservation, however, that a certain form of hypertrophy is usually accompanied with hyperæmia. It is that commonly called subinvolution of the uterus."

We wish it, however, clearly understood, that the hyperæmia in this instance is not the primary or essential cause of the hypertrophic condition of the uterus, but only one reason why the unnaturally developed uterus does not return to its natural state.

Authors who have ventured to describe this peculiar affection have, as a rule, carefully avoided to call it hypertrophy; the term comprising not only an enlarged size, but also a process of irritation, in consequence of which a small organ began to grow, a feature which is not observed in the case of imperfect involution.

The views regarding true or numeric hypertrophy of the uterus—not the consequence of tumors developing inside the cavity or the tissue of the womb—are far from being settled. As yet it is questionable whether a uterus originally of normal size does ever, out of pregnancy, assume true hypertrophy.

On the same page the Doctor makes the following remarks: "Frequently true hypertrophy of the body of the uterus is found connected with areolar hyperplasia of the cervix; many facts might be given in proof of this position"

The committee simply has to state that it is not aware of the existence of such facts, and that it would have been the duty of the writer to make them known in his paper, in order to corroborate this extraordinary proposition.

By reading over the description of the third form of disease, sclerosis, we find that the author simply describes that affection which has been known until now, under the several names of chronic metritis, chronic infarctus, areolar hyperplasia, and diffuse interstitial metritis. The author himself asserts that they are very much alike in their anatomical character, while, in his opinion, they differ in cause and clinical history. The cause in the one is, according to his views, hyperæmia,—in sclerosis, puerperal metritis.

Having already stated above our views regarding the etiological importance of hyperæmia, we cannot admit a classification which is based on erroneous views regarding the generic importance of hyperæmia. As to the clinical difference mentioned by the author, viz., the lessened size of the square diameter of the uterine cavity, characterizing sclerosis as so-called concentric hypertrophy, we venture to remark that it is claimed as being one of the characteristics of areolar hyperplasia by most authors. Nor are his anatomical characteristics recognized by any other man of authority. Virchow as well as Klob, and, above all, Finn, lay great stress on the amount of muscular tissue in areolar hyperplasia.

As long as the Doctor is not in a position to lay before us a goodly number of anatomical researches, as long as he draws his conclusions on his reading and clinical observations only, he is not justified in cutting out a section out of that class of diseases hitherto called chronic metritis or areolar hyperplasia, and to designate it with another name.

As to the choice of the designation sclerosis, we have to remark that the name which the author proposes is not new, but used already for the same affection, namely, a hard swelling of the uterus, the consequence of inflammation, by Galenus, in his "Definitiones Medicæ."

In presenting this report, Mr. President, the committee did not intend so much to criticise Dr. Skene's interesting paper, but rather to elicit more fully the views of its author, and especially to stimulate him to bring before the society the proofs and facts upon which his theories have been based. Finally, it was intended to bring the whole subject of chronic uterine inflammations before the members of our society.

QUARTERLY REPORT ON OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

Puerperal Arthritis:—Erosion of Cartilages of Elbow, Hip, and Ankle Joints. By Dr. Evory Kennedy, late Master of the Dublin Lying-in Hospital. (*The Doctor*, Sept. 1, 1872.)

Mrs. K—, three weeks delivered after a difficult and protracted labor, was awakened from sleep in the night by an acute pain in the left groin. In the morning she observed a swelling in the middle of the thigh, which at the end of two days had completely engaged the entire limb. The pain became less acute as the swelling increased, but never entirely subsided. Some days subsequently to the swelling of the thigh, she was seized with violent pain in the elbow, but did not perceive any swelling. All these symptoms progressively increased, notwithstanding frequent leeching, stuping, poulticing, opiates, and mercury. She was admitted into hospital on January 28, 1829, and on the 30th there was an obscure sense of fluctuation over the outer third of the thigh. An incision was made into it, but no pus followed. On February 3d she had a severe rigor, and on the 4th she died comatose. A *post-mortem* examination was made twelve hours afterwards. The cellular tissue throughout the entire thigh was filled with gelatinous lymph. An extensive abscess extended from nearly one extremity of the thigh to the other, between the periosteum and muscles. The muscles were pale and flabby, and appeared much softer than natural. About one inch of the upper part of the femoral vein contained pus; its inner tissue was vascular, but did not appear to have lymph upon its surface. The synovial membranes of the hip, knee, and ankle joints were filled with puriform matter. The cartilage covering the bones of the hip appeared healthy; whilst that covering those of the knee and ankle was in part removed by absorption, particularly in the ankle, where scarcely a trace of cartilage could be detected. The uterus was vascular and inclined towards the left side. The lymphatic glands along the iliac vein were enlarged and vascular. The cartilage was removed altogether from the extremities of the bones forming the right elbow-joint. The viscera appeared healthy.

FŒTAL FEMUR EMBEDDED IN THE UTERUS. BY DR. EVORY KENNEDY, late Master of the Dublin Lying-in Hospital. (*The Doctor*, Sept. 1st, 1872.)

A LADY was brought to me from the country, anæmic, wasted, and with a countenance expressive of pain and suffering. She had a constant fœtid vaginal discharge, purulent, and occasionally sanious. She was said to have miscarried a year before. She complained of pelvic distress, with lumbar pains and frequent micturition. On vaginal examination, the uterus was found about double its natural size. The os was slightly patulous, and a solid hard resistance was experienced on introducing the finger. The os was gradually dilated with a two-bladed uterine dilator constructed for the purpose, and a bony substance was distinctly felt traversing the neck of the uterus at the junction with the body of the organ. This was so deeply embedded in the walls of the uterus, that neither extremity could be dislodged. I introduced a pair of small beaked bone forceps, constructed for the purpose, broke the bone across, and extracted piecemeal the femur of a fœtus of about four months' development, which had been all the time embedded in the walls of the uterus, which was converted into an abscess by the presence of what should have been its natural occupant, thus forming an unnatural nidus in its walls in place of its cavity. The discharge subsided, and the lady recovered her usual health; but the look of health was never quite restored. She, however, bore children after an interval of six years, and the uterus appeared to have quite regained its normal condition.

RESEARCHES ON THE MOVEMENTS OF THE UTERUS. (*London Lancet*, Sept., 1872.)

D. L. OSER and W. Schlesinger have undertaken a series of investigations into the character of the uterine movements, which, they observe, have been but little studied of late years, and with improved means of research, whilst those of the intestines, ureters, and other organs have been carefully examined. Their experiments were performed upon, for the most part, twenty animals, and are recorded in the last part of Stricker's *Med. Jahrbucher.* At the commencement they found not unfrequently that a stimulus which in one animal excited the most violent uterine contractions, in another was apparently wholly inoperative, and this not only in animals of different genera, but in those of the same species. In rabbits, for instance, it sometimes happened that the slightest mechanical stimulus called forth active contractions, whilst in another animal no response occurred to the strongest electrical currents. They find that the animals best adapted to exhibit the movements are young but sexually mature rabbits which have not yet been impregnated. In these the uterus, when the abdominal cavity is laid open, appears as a flat, band-like, pink-colored organ, at perfect rest, and but rarely exhibiting spontaneous movements. Their first experiments were made to determine the effect of arrest of the respiration. Krause, Mayer, and Basch have all shown that asphyxia induces movements of the intestines; but it has not hitherto been shown that a similar effect is produced upon the uterus. Oser and Schlesinger's experiments, however, show that in from ten to thirty seconds after suspension of the respiration contractions are perceptible, commencing from the tubes and cervix, which in a few seconds more extend over the whole uterus. This organ becomes pale, cylindrical, and rigid, and moves downwards and towards the middle line; the cornua raise themselves in an arched manner, and, intercoiling, almost form a ball. The contractions increase in vigor with continued arrest of the respiration for some minutes. In a second set of experiments the effects of compression of the aorta were investigated, and it was ascertained that general contractions of the uterus occurred in a period varying from eighty to one hundred and twenty seconds after. Rapid abstraction of blood from the system generally produced the same effect. It was remarkable also that contraction of the whole uterus resulted in a few seconds from suddenly applied compression of the four cerebral arteries, which showed that the presence of imperfectly arterialized blood in the uterus itself was not a necessary condition for the production of the contractions. Küssmaul and Tenner long ago described a somewhat similar experiment, but gave a different explanation of the phenomena observed. In a pregnant rabbit they exposed and compressed the carotids and vertebrals. Extrusion of the fœtuses occurrred, but it was accompanied by convulsions, and they attributed the delivery to these rather than to any contractions of the uterus. Oser and Schlesinger further found that, after section of the spinal cord in the cervical region, the contractions of the uterus no longer occurred more rapidly after arrest of the respiration than after compression of the aorta, in each case supervening in about the same space of time—that is to say, in about one hundred seconds. After section of the cord, neither general loss of blood nor arrest of the flow of arterial blood to the brain produced any perceptible contractions. It was ascertained that no motor stimulus is conducted to the uterus from the brain through the vagus or sympathetic nerves, since section of these nerves was without influence on the movements, whether the cord was divided or not. The authors of the paper do not attempt to fix the situation of the centre for the uterine movements, but they point out that their experiments prove that it lies at a higher point than that at which they divided the spinal cord—namely, between the occiput and atlas; and they think it is probable that it occupies some part of the medulla oblongata. At all events, it is unlikely that it is situated in the spinal cord, since the experiments of Küssmaul and Tenner and Schiffer show very clearly that the circulation of dyspnœic blood (a term that implies no theory as to whether the phenomena produced are due to the absence of oxygen or the presence of carbonic acid) through the cord is not followed by any symptoms of irritation—as by convulsions,—but by rapid paralysis of the posterior extremities, the paralysis appearing in the course of a minute or a minute and a half. But in Oser and Schlesinger's experiments the uterine contractions did not occur in any case till after the lapse of a minute; and hence, if it were maintained that they were due to the passage of dyspnœic blood through the cord, it must also be admitted that such blood acts coincidently as a stimulus to one spinal motor centre and as a paralyzer to another. It is much more probable that they are due to the passage of such dyspnœic blood through the medulla oblongata. Other considerations lead them to the same conclusion.

VARIATIONS IN WOMEN'S MILK RESULTING FROM INSUFFICIENT FOOD. (*London Lancet*, Sept., 1872.)

DR. DECAISNE lately reported to the Académie des Sciences the results of his observations on forty-three women who suckled their infants on insufficient food during the siege of Paris. Such women either produced abundant and good milk and their children throve, whilst they themselves became greatly emaciated, or they produced but little milk and that of a bad quality, so that the children throve badly, and for the most part suffered from choleraic diarrhœa; or, lastly, they produced scarcely any milk, and the children died. The following table shows analyses from the three various types :—

		Butter.	Casein.	Albumen.	Salts.	Sugar.
1.	Fasting	3·10	0·24	2·20	0·20	6·24
	Well fed	4·16	1·05	1·15	0·30	7·12
2.	Fasting	2·90	0·18	1·95	0·16	7·05
	Well fed	5·42	1·15	0·95	0·25	7·05
3.	Fasting	2·95	0·31	2·35	0·31	5·90
	Well fed	4·10	1·90	1·75	0·31	5·95

It is interesting to notice that the albumen and casein taken together are nearly the same both in the fasting and the well-fed state, though they seem to have an inverse relation to one another.

ŒDEMATOUS ELONGATION AND PROLAPSUS OF THE CERVIX UTERI. (*London Lancet*, Sept., 1872.)

IN an able paper in the *Archives de Médecine* (July, 1872), Dr. Guénot has carefully investigated the above subject. The chief points of the paper may be briefly summed up thus: The author considers the disease as comparatively frequent, it being often confounded with hypertrophic elongation or pure prolapsus. Its symptoms are quite distinct, however: hyperæmia of the organ; the peculiar disposition of the cavity (transformed into a long and open canal); the rapidity with which the various symptoms are liable to disappear, and their facility to return under certain circumstances; ulceration of the os, inversion of the vagina, attenuation and flaccidity of the uterine walls, pains around the pelvis, general weakness, and disorders of nutrition, being the characteristic traits of the disease. The causes are complex, and are anatomical or mechanical. The disease is more painful and inconvenient than dangerous to the mother; but it is highly serious to the child, by producing premature labor or abortion. The treatment suggested is to put back the prolapsed organ into the vagina, and maintain the reduction by means of a bandage to the vulva; horizontal posture; careful abstinence from the use of pessaries; and, after delivery, prolonged observance of the recumbent posture.

ON INVOLUTION OF THE UTERUS. (*The Doctor*, Oct. 1, 1872.)

IN the *Arch. f. Gynäk.*, B. III., Dr. Pfannkuch observes that the tendency of the uterus, whether in the puerperal condition or otherwise, to turn to the right and to press with its left corner forwards, is already noticeable in the fœtus, and depends on the position of the pelvic viscera. In extra-uterine life we have to notice as supports the pressure of the intestines, and especially of the rectum, with the weight of the uterus in its position on the left; the last takes place notably during pregnancy and childbed. That the bladder has power to change the position of the pregnant uterus according to its condition of fullness, is known to all. Pfannkuch comes to the conclusion that, as a rule, the uterus constantly lies on the right side, and that an alteration of this position to the left takes place especially in conditions where the mobility of the uterus is abnormally increased, as in cases of narrowing of the pelvis, and absolute or relative smallness of the organ. Even collections of relatively small quantities of urine in the bladder cause the uterus to ascend and to be pressed toward the right side; but the gravity of the puerperal uterus may make it bend towards the left. The distance of the fundus from the symphysis, as also the angle of side deviation, increases generally in proportion with the increase in size of the bladder, and about one hundred cubic centimetres of urine raise the uterus about one centimetre.

TREATMENT OF UTERINE FIBROIDS BY SUBCUTANEOUS USE OF ERGOT. By DR. HILDEBRANDT, of Königsberg. (*Berlin Klin. Woch.*, June 17, 1872.)

NINE cases of this affection are reported treated by ergot subcutaneously applied. He employs a solution of three parts of aqueous extract of ergot in 7.5 parts of distilled water, and the same amount of glycerine. Langenbeck's solution he has found to produce pain, owing to the alcohol which it contains, while the solution which he recommends is free from this objection, and moreover does not cause suppuration. Somewhat tender indurations are now and then left for some time at the seat of injection, the lower part of the abdomen being more sensitive to puncture than the region around the umbilicus. In general, the operation is unattended with unpleasant results. At the time of menstruation, and for a few days before and after, slight bleeding may take place from the punctures.

Case I.—A female, aged 31, had a tumor in the hypogastrium for three years, which had the appearance of a gravid uterus at the seventh month, and which was diagnosticated to be an intra-uterine fibroid. The apex of the tumor was four inches from the symphysis pubis, aed about the same in antero-posterior diameter. Hemorrhages were frequent and copious. It was to relieve this symptom that M. Hildebrandt resorted to the use of ergot, with the motive also of producing contraction of the uterine walls and the engagement of the tumor in the mouth of the uterus, where it would be within reach of surgical measures. The injections of ergotine gave a remarkable result. Having been injected each day for six weeks with the contents of a Pravaz's syringe, the menstruation became more regular, less abundant, and less painful than before. On the cessation of the menses the daily injection was continued, the tumor becoming smaller from week to week, and at length it disappeared after fifteen weeks of this treatment.

Case II.—The result, without being equal to those of the preceding, was nevertheless favorable, the uterus being certainly diminished in volume by absorption of the intra-uterine tumor; menstruation became regular, and pain and leucorrhœa disappeared.

Case III.—A woman of thirty had had menstrual troubles since the age of sixteen, the courses sometimes lasting from six to eight months. Anæmia and emaciation were extreme. The fundus of the uterus reached nearly midway from the pubis to the umbilicus. By touch a tumor could be distinguished in the right anterior wall of the uterus. Subcutaneous injections were made daily from January 17th to March 5th, 1872. When the patient was discharged, the menstruation lasted only three days, and was regular. The general condition of the patient was improved, and the uterus notably diminished in size, the vaginal portion having in great part returned to its normal volume.

Case IV.—A woman of forty-five presented a tumor the size of an infant's head, the uterus filling the pelvic cavity. The hypertrophied cervix projected from the vulva. In November, 1871, the vaginal portion of the cervix was amputated, and after the wound had healed the injections were commenced. On the 15th of April following, after thirty-six injections, the uterus was easily movable, and was sufficiently diminished in size to admit of the adjustment of a ring pessary.

Case V.—A woman of forty-four years, whose uterus presented the appearance of one seven months pregnant. It was irregularly developed, on the right reaching beyond the umbilicus and nearly to the false ribs. The treatment extended over one hundred and twenty days, an equal number of injections being made. The general condition of the patient was much improved, and the top of the tumor extended only to the umbilicus.

Case VI.—In a woman forty-five years old, the uterus reached to the umbilicus, and was anteverted. A large fibrous tumor occupied the anterior uterine wall. Hemorrhages and irregular menstruation. The improvement was equally well marked, the fundus uteri descending to a point midway between the symphysis and umbilicus.

Case VII.—A female suffering from profuse, irregular, and painful menstruation, which had caused anæmia and emaciation. The uterus about the size of one in the fourth month of pregnancy. After ten injections and one menstrual period, a polypus the size of a hen's egg appeared at the mouth of the womb, which could not, however, be seized, on account of the narrowness of the cervix. Twenty-four injections more were made, by which time the menses became regular, painless, the uterus diminished in volume, and the polypus smaller and more movable, but still not accessible to the *écraseur.*

Case VIII.—The uterus the size of one in the ninth month of pregnancy. After six injections symptoms of poisoning by ergot appeared, and the treatment was suspended for six days, when it was again undertaken. After half a dozen injections the symptoms of ergotism supervened, and after still a third attempt, followed by like results, the treatment was discontinued without any amelioration having taken place in the condition of the uterus.

Case IX.—In this case a woman of twenty-four years, with a sub-peritoneal fibroma, could not support the treatment, and but three injections were made.

It is not easy to define in these cases the mode of action of the ergot. It would seem, however, that owing to the contractions produced by the ergot in the nutritive vessels of the tumor, and also in consequence of the compression of the tumor by the contraction of the uterine walls, the nutrition of the tumor was modified, and fatty degeneration and absorption of its substance took place. It is probable that intra-uterine tumors would be more easily modified than the sub-peritoneal variety, and that myomata would be more easily treated than fibromata.

ABSORPTION OF FIBROID TUMORS OF THE UTERUS. BY M. GUÉNIOT.—(*Med. Times and Gaz.*, March 23, 1872.)

IN his opinion, founded on M. C. Bernard's experiments on the pancreas, when a fibroma or myoma disappears by absorption, it first undergoes fatty degeneration; and, therefore, those agents should be employed in their treatment which tend to produce fatty transformation of the tissues or organs. The principal of these are arsenic, phosphorus, and lead; and it is to such medicinal substances recourse should be had much rather than to mercury, iodine, bromine, and the alkalies. The following are his conclusions: 1. The cure by absorption of certain fibroid tumors of the uterus, still sometimes disputed, may henceforth be regarded as a truth definitely proved. 2. These tumors may even undergo a rapid dissolution, some months sufficing in various cases for the complete disappearance of even large myomas. 3. In the cases hitherto observed, absorption has taken place during the period of activity of the genital affections; but the puerperal state has only quite exceptionally exercised an evident influence. 4. Uterine myoma may also disappear without surgical operation by two other modes, viz., spontaneous expulsion, and gangrenous destruction or suppuration. But its disappearance by absorption, being the only mode completely exempt from danger and followed by cure, is that which should especially be sought to be induced. 5. Although the attempts made in this direction have almost constantly been unsuccessful or dubious in their results, some facts authorize us to believe that treatment is on the road of progress. 6. As far as can be judged by analogy, a uterine myoma, in order to become susceptible of absorption, must first undergo a fatty transformation of its mass. 7. The employment of steatogenic substances, such as arsenic, phosphorus, lead, etc., seem especially indicated in view of this result.

THE TREATMENT OF OVARIAN CYSTS IN BELGIUM. By DR. LEFEBRE (*Presse Med. Belge*, October 15th, 1871.)

SEVERAL interesting cases of ovarian cyst cured by nature and art are mentioned. In the first case, a lady, æt. forty-two, remarked about the end of June, 1869, a slight swelling of the abdomen; at the commencement of the month of August this tumor was of considerable dimensions, when a cyst of the ovary was diagnosed, probably unilocular. After a puncture, which gave vent to eleven litres of a thick liquid of a chocolate hue, an iodine injection was used. This operation was repeated without success five times in six months. Ovariotomy was proposed but not accepted. Dr. Bribosia then decided to open the cyst largely by means of Canquoin's paste. This operation was accepted, and although the patient had at different times symptoms of purulent infection, she was at last cured. In another case, in a young lady of the age of twenty-nine, when the operation was practised, the first symptoms of the disease had lasted three years, and the tumor was voluminous, knotty, and unequal. An exploratory puncture gave issue to about 100 cubic centimetres of a thick and viscous fluid. The diagnosis was that of a cyst of the left ovary, multilocular, with viscous contents, complicated by ascites, and ovariotomy was unanimously proposed. The patient did well, and on the eighth day the abdominal wound was closed and the clamp came away; on the 20th day the cicatrization of the surface of the pedicle was complete. In a third case, a widow, æt. fifty-seven, who had borne four children, had a cyst of the left ovary. In 1867 this was the size of the fist only, but a year after it had attained great dimensions, as large as a woman pregnant at the 8th month. During the course of December, 1868, the abdomen sank down, and made the patient think herself cured, but gradually the tumor recommenced again and attained its former size. In the month of July of the same year the patient had violent abdominal pains; there occurred frequent and abundant dejections, composed of glairy matters, compared by the author to frogs' spawn. The abdomen kept sinking, and towards the middle of August all trace of the disease had disappeared. To terminate the report, Dr. Lefebre adds two cases in which two young girls, one æt. twenty-five, the other æt. thirty, with simple unilocular cysts, were both radically cured by one injection of tincture of iodine diluted with equal parts of water.

Prof. Lefebre says that ovarian cysts may get well of themselves, the liquid may be resorbed, but this is infinitely rare. The ovarian sac may be accidentally ruptured and the fluid taken up by the peritoneum. Such facts may suggest the idea of subcutaneous incision of ovarian cysts in some instances, but mortal peritonitis is sometimes caused. The ovarian cyst also may contract through inflammation, adhesions with the abdominal parietes, or viscera of the pelvis, etc., and thus the fluid may escape into the intestines, the vagina, or the bladder. Such terminations, however, are infinitely rare, certainly not one in 100 cases. So that, as a general rule, what W. Hunter said a century ago is true, that ovarian cysts when let alone do not get cured. What happens to them in such a case? They may stop at a certain stage of development and remain stationary a long time, even sometimes during the lifetime of the patient; but this is the exception, and is scarcely noticed save in women who have passed over the period of activity of the generative system. Most generally the pathological evolution of the cyst progresses to a fatal termination, and the patients succumb to different accidents. The duration of the disease is rather variable, and Velpeau estimated it at five or six years. Iodine injections as a curative method have had their trial. We have only to read the conscientious work of Dr. Boinet, to become convinced that this plan usually succeeds when cases are well chosen, and, secondly, that it is a very innocent plan. In the first hundred cases treated by Boinet by iodine injections, he obtained sixty-two cures, but since then, when the method was restricted to the cases suited for it, he obtained no less than twenty-seven cures in twenty-nine cases. Nowadays this indication may be laid down in a precise way; experience, in fact, proves that iodine injections succeed when cysts are simple, with serous, sanguineous, or purulent contents. As to the degree of danger in this operation, it is sufficient to say, that out of 132 patients operated on by Boinet by injection, he lost but four during the few first days succeeding the operation—that is, during the period when such accidents might be expected, and we have to note that in all the four cases imprudence had been committed. If we put down, however, these five cases to the charge of the operation, that will give us only a mortality of one in ninety cases. Prof. Lefebre, out of twenty-five cases of iodine injection, had no death, and only some symptoms of iodism, more or less pronounced. He adds, that the treatment by iodine injections does not generally call for any other consecutive care, but only rest in bed for a few days.

As to the treatment by a large opening into the cyst with suppuration, this operation has long attracted the attention of Dr. Lefebre, and in 1862 he employed it successfully on a young lady with purulent cyst of the ovary. The cure in this case was so complete, that in a short time afterwards there was a happy pregnancy followed by favorable labor. This is a rational operation, and in fact is the exact copy of what Nature does in those rare cases when it cures cysts of the ovary without the doctor. It provokes an adhesive inflammation between the cyst and the abdominal walls, then ulceration, and the progressive evacuation of the fluid, with the slow atrophy of the cyst walls, and, finally, the obliteration of the sac. If we wished to follow step by step in the same path, we should—1st, provoke the adhesion of the cyst to the peritoneal tunic, in order to avoid with certainty all effusion of liquid and all penetration of air into the splanchnic cavity; 2d, we ought to leave to Nature the elimination of the eschar, in order that the evacuation of the ovarian fluid may take place slowly, or drop by drop, so that the cyst may close in as it goes on emptying itself; 3d, there remains the danger of the alteration and resorption of the liquid. This would be much diminished by the process just spoken of. But in any case we possess nowadays resources not formerly in our power in lotions of phenic acid, or of tincture of iodine, or permanganate of potash.

Ovariotomy, which should be named ovariectomy, is now one of the regular operations of surgery. The statistics made in France, England, and America give two successful cases out of three operations, or 67 per cent. If we compare these results to that of great operations at all times considered allowable, such as ligatures of the great arteries, which only give 60 to 67 per cent. cures, and other great operations which give still more unfavorable results, we arrive at this conclusion, that ovariotomy is a precious conquest for modern surgery, and must not be abandoned. Dr. Boddaert was the first *Belgian* surgeon who successfully practised ovariotomy.

Professor Lefebre terminates these instructive remarks by saying: 1st, with the exception of rare cases on which we must not count, ovarian cysts do not get well of their own accord; 2d, in fortunate but rare cases ovarian cysts are arrested in their development, and only act as foreign bodies; and as they are seated in the most tolerant of the splanchnic cavities, they are not incompatible with health; whence this conclusion: when we have to do with a stationary cyst of middling size, which does not notably trouble the great functions, we should use expectation, that is, suspect the tumor, watch it, and prevent or combat the inconveniences which it may occasion; 3d, almost always the development of ovarian cysts goes on slowly but surely; and the death of the patient follows in 80 per cent. of the cases in a time which varies from some months to some years. When, then, after having diagnosticated a cyst of the ovary, we become assured of its continued development, the indication for curative treatment is evident; 4th, the methods of treatment among which we shall have to make our choice, according to the case, are three in number—iodine injections, preceded by evacuation of the fluid, the opening of the cyst by caustic, and the subsequent treatment of the case; and, lastly, ovariotomy. Iodine injections ought always to be tried when a simple unilocular cyst exists, with thin walls, and serous, bloody, or purulent contents. Ovariotomy is the only operation we can propose when we have diagnosticated a solid tumor of the ovary, a mixed or composite tumor, or a multilocular cyst. The opening of the cyst by caustic cannot be applied except to unilocular cysts, which have resisted iodine injections.

The Treatment on Infantile Paralysis. By Dr. Hitzig and Dr. Jürgensen (*Deutsch Arch. f. Clin.* 9 B. 3 H., and *The Doctor*).

In the period of early childhood there exists a certain disposition to sudden disease of the central nervous system, which in certain cases affects the brain, in others the cord principally. The difference of the symptoms in palsy takes place chiefly from the different locality affected. The attempt to make sharply defined definitions of the various kinds of infantile palsy has not succeeded, but quite confused the question. As to what concerns the origin of the contractions, Hitzig objects to the theory of Hueter, according to which contractions take place according to fixed mechanical rules. External circumstances and mechanical forces may in two cases be precisely similar, and yet in one case a notable contraction will appear which will be absent in the other case. Contractions on the palsied side may, analogously to the cases of degeneration of the cellular tissue of the muscles in experiments when nerves are cut, be explained by the contractions of the scars. As to therapeutics, Hitzig raises an earnest protest against the premature judgment concerning the effect of electro-therapeutics in said disease. In truth the matter so stands, that we can only exceptionally arrive at rapid results ; the great majority of cases require, however, a longer treatment of the muscles, in which the signs are found, after prolonged investigation, of regained or still present connection with the centre. With great care in time we arrive at slight results, which are of priceless value to the child. Jurgensen insists that even when the disease has existed a year, notable advantage is gained by electro-therapeutics. The patience of a horse is required to gain results from electricity. But it is no less true that many cases of infantile palsy which appear hopeless are amenable to galvanism.

INFANTILE PALSY. BY DR. ROSENTHAL (*Med. Chir. Runds.*, Feb., 1872, and *The Doctor*).

THE diseases of the spinal cord in children differ from those in adults : 1. The form of tubes does not take place in children. 2. In adults the clinical criteria of infantile palsy is wanting ; rapidity of progress, with deep and general disturbance of nutrition, quick loss of motility and electric irritability. Acute parenchymatous myelitis is also noticed in childhood. Rosenthal has formerly described such a case of *post-mortem* examination [reddish grey softening of the cord from the under part of the cervical portion downwards]. In older children he observed secondary myelitis from pressure after caries of the spine (an affection not so very rare). On the other hand, the want of power to walk, remarked in rachitic little children, or even to stand, whilst movements can be made when they are lying down, must not be looked on as palsy, but as want of power of co-ordination. The most common spinal palsy in childhood, however, is the so-called *essential palsy*. The appearance observed by Salmon and Eulenberg, that in commencing loss of faradic reaction, the galvanic irritability of the muscles and nerves can still be noticed, is confirmed by Rosenthal ; but it must be considered that essential infantile paralysis does not so conduct itself entirely in this direction as peripheral palsy does; faradic reaction is only earlier lost than galvanic; the latter is never increased, and all reaction is wanting in greatly atrophied and palsied muscles. Faradic and galvano-muscular reaction may entirely have vanished, whilst non-voluntary motion has returned to a great degree. This is contradictory to Duchenne's remarks; but in a case of palsy treated for two years this was found to be the case. Concerning the prognosis of electric treatment, Rosenthal says: "Electric treatment patiently continued is, even in such cases (in which electro-muscular contractility is wanting), of beneficial influence on nutrition, temperature, and growth of the emaciated extremities. It is only when in the course of a year electric irritability and mobility have not reappeared, that the chances of recovery are lost."

New investigations have placed the anatomical lesions taking place in infantile palsy in a clearer light. H. Roger and Duchenne found atrophy of the anterior roots and lateral column; Cornil, in 1864, atrophy of the antero-lateral columns with numerous amyloid bodies in the anterior cornua of the gray substance; Prevost and Vulpian (1866) found atrophy of the anterior roots, with narrowing and partial sclerosis of the left anterior cornii. The observations of Charcot and Jeffroy gave atrophy and irregularity of the anterior cornua (paraplegic form during life), with atrophy of the anterior roots and anterior lateral columns. Charcot and Jeffroy consider the atrophy of the nerve cells of the anterior cornua as the primary disease, which may further attack the anterior roots and later on the posterior, as also the white medullary matter. Rosenthal thinks the preparation of Charcot which he saw in Paris has a different signification. In the most altered specimens of anterior cornua, we find also the greatest vascularization, and the greatest amount of nuclei around the vessels and around the lymph spaces. Thus the vessels must take a great part in the process which is accompanied by medullary hyperæmia and exudation from the vessels, which lead to secondary disturbance of nutrition of the nerve cells of the gray substance.

INSANITY IN CHILDREN. BY DR. CONYBA (*L'Union Méd.*, 76, 1872).

MANIA is certainly relatively rare in children, but even the few cases of it seen show the erroneous nature of the opinion, that mania is quite specially the consequence of unrestrained passion. A disposition to insanity is either hereditary or individual; the latter is shown by the ease with which delirium is aroused by fever. The commonest causes are: onanism, pederasty, early menstruation, helminthiasis, dreams, terror; in poison by alcohol or lead, etc.; past meningitis, acute exanthems, epilepsy, and imitation in epidemic cases. When children suffer from hallucinations they have less power against this influence than grown-up persons have; miraculous cases of religious madness are commonest among children. Folie of children is either general or partial. The general put on the character of depression of spirit or of mania. In the first case the children sit with sad gaze, with an expression of anxiety in their countenance; turn the head from time to time, as if listening to some one speaking; the pupils are enlarged; they are without fever, but have generally a rapid and bounding pulse. There is sometimes complete intermission, which may conduct to cure. In the maniacal form the children speak much, and without any thread to their discourse, concerning persons and things around them; they have illusions and hallucinations, on account of which they whistle, make faces, and laugh or swear, etc. This condition is often quite without fever, but it does not always conduct to lowering of intellect. In partial mania the children have ideas of suicide. Partial mania is often caused by onanism. Such children speak immodestly and make immodest gestures, whilst the genitalia bear the marks of onanism. Passive pederasty causes an apathetic, sad, lazy form of insanity, accompanied by bursts of rage and destructive inclination.

GANGRENE OF THE LUNGS IN CHILDREN.

IN an inaugural dissertation by L. Atkins, of London (*Zurich*, 1872), there is a very careful survey of observations made up to this time on gangrene of the lungs in children. This disease appears in children rather more frequently than in adults. It is caused by general and local causes. Among the first an acute exanthem, especially measles, and tubercles, typhus, and scrofula are causes. Catarrhal pneumonia is a local cause. The authoress mentions two cases of gangrene of the lung from embolism of the pulmonary artery. The so-called cases of spontaneous gangrene of the lungs may be caused by thrombus in the vessels of the lungs, which are the result of want of power and insufficiency of the breathing effort. Wounds are frequent causes in childhood of gangrene of the lungs.

The symptom which leads to diagnosis is the fetid smell of the breath; but this may be wanting when the branches leading to the gangrenous collection are stopped up; and moreover disease of the mouth and throat may cause the same fetid smell. The sputum is often wanting in children. The strength falls rapidly, the skin becomes of an earthy hue, there is lively fever, and auscultatory and percussive phenomena are noticed. The differential diagnosis between gangrene and putrid bronchitis is very difficult, as is also that between it and bronchiectic cavities very difficult. The prognosis is very unfavorable, but not absolutely fatal. Among fifty-four cases, five recovered. Hæmoptysis or pneumothorax may occasion death after a duration of from two to twenty days.

JAUNDICE OF NEW-BORN CHILDREN. BY PROF. KEHRER (*Obst. Jahrb.*, 1871).

THE author speaks of three degrees of jaundice. As the first stage, he describes that in which the skin and conjunctiva have for one or a few days a clearly yellow hue, whilst the urine, however, has no peculiar reaction of bile. In the second stage the skin, with the exception of the soles of the feet and palms of the hand, scrotum, and such-like red-tinged spots, is colored of a pale yellow, whilst in the third stage the skin is intensely colored, and the mucous membrane of the mouth is colored yellow.

Of 633 children there were 321 boys and 312 girls, of whom 71 per cent. of boys and 203 per cent. of girls had jaundice. First-born children were rather more frequently attacked than others. Early purging of the meconium does not hinder the development of jaundice. We must then abandon the idea that the jaundice is caused by resorption of the meconium, which is rich in bile in newly-born children. In jaundice in newly-born children, we find the liver throughout or in parts yellow-colored, from the bile contained in the liver-cells. Frerichs thought icterus neonatorum due to diminished tonicity of the capillaries of the parenchyma of the liver, which takes place when the flow from the umbilical vein is stopped, and permits of increase of bile in the blood. Hardenhain admits that after compression of the aorta, the pressure of the secretion in the ductus choledochus falls off. Virchow thinks that icterus neonatorum results from catarrh and stoppage of the bile-duct. The disease commences commonly on the second or third day, and seldom on the first or fourth day of life. Prognosis is often good even in cases of higher degree of jaundice.

PURULENT OPHTHALMIA OF THE NEW-BORN. By DR. GUERSANT. (Surgical Diseases of Children, Chap. XXIX., *Medical News and Library.*)

THIS disease receives its name from a specific inflammation of the oculo-palpebral conjunctiva, met with in children at birth, or some days afterwards. It solely attacks children, and sometimes several at the same time. It may attack one eye or both, and may be epidemic.

The *causes* are often obscure, and there may be several of these. The child may contract this form of ophthalmia at birth, in its passage through the vagina, which may be bathed by a leucorrhœal discharge, or it may have caught cold soon afterwards. What is certain is, that this ophthalmia sometimes declares itself under the influence of special conditions of the atmosphere, and is essentially contagious, the child giving the disease to its mother, to its nurse, and to other children. On this subject all authors are agreed.

Symptoms.—The commencement of this disease may be recognized by the following symptoms: In the *first stage*, the third day after birth, the eyelids are found to be adherent by several slight crusts, the upper one being somewhat smaller, and presenting a transverse linear redness. There is tumefaction of the border of the lid, especially on the inner side, with pain and sometimes fever. This tumefaction goes on increasing, the redness extends, and the inner surface has a villous appearance, with an injected condition of the ocular and palpebral conjunctiva. We have difficulty in reversing the lids, which the patient keeps closed, for the eye is sensitive to light.

In the *second stage*, there forms under the lids a mucous viscous fluid, which clings to them, and soon becomes white and thick, and separates from them when we raise them. The edge of the upper lid tends to pass over that of the lower, the injected condition spreads from the lids over the globes of the eye, and advances toward the cornea, and a swelling of the conjunctiva results, by which the cellular tissue becomes infiltrated and forms a chemosis. The secretion becomes more and more abundant, then ceases to be thick, becomes serous, and trickles over the cheek. The cornea remains transparent, examination of the eye becomes very painful, the orbicularis palpebrarum muscle contracts, and we have to raise the levatores palpebrarum to see the globe of the eye. We should not hesitate to chloroformize our patient under such circumstances, to determine the exact condition of the eye, and we will then find either pus, or granulations, or false membranes, from which we may describe three varieties of this affection: the purulent, granular, and pseudo-membranous or diphtheritic. An ectropion sometimes forms at the moment of examining the eye, which may persist, and then decided granulations are seen on the palpebral conjunctiva, and the manner of the discharge becomes sanious, being mixed with blood. If the disease does not continue to develop, it may terminate without leaving any traces, the granulations cease to be formed, the pus dry up, and the false membrane become detached.

Third Stage.—If the ophthalmia is not arrested, we now find the discharge becoming completely purulent, and there often exists, at this time, a false membrane, but not constantly so in all cases. Usually, the cornea, which had remained transparent, becomes muddy, softened, and infiltrated with pus, followed by abscesses, which open and leave perforating ulcerations of the cornea, which is sometimes destroyed, mortified, and as if strangulated. At other times, before the loss of the cornea, there may be seen, within a twenty-fourth to a twelfth of an inch of the circumference, an annular effusion, more or less complete, followed by a slight cloud spread uniformly over the surface of the membrane. This sometimes extends with great rapidity, and then a general opacity follows, which is due to purulent infiltration. The cornea, softened in its whole extent, soon presents a conical projection; ulcers form upon it, that open and give an outlet to the humors of the eye, which escape with the crystalline; sometimes there is a hernia of the iris through these ulcerations; at other times, at the moment we endeavor to examine the eye, it ruptures, producing a peculiar sound, and becomes atrophied. We may anticipate this serious termination when we see the annular effusion, already referred to, spread over the whole cornea, and taking a general yellow tint. It is in these cases that the disease is checked; the ring gradually diminishes in width, and circumscribes at the centre of the cornea an opaque spot of varying extent. When it has reached this condition, the disease may remain stationary, or else is subject to relapses, which we should be on the lookout for.

Prognosis.—This is generally grave, unless the symptoms are checked at the outset. At that time the disease may terminate by resolution, but slowly. Under these circumstances, the palpebral swelling diminishes, the discharge ceases, and the photophobia is less marked, and this resolution enables us to separate the lids and bring the eye back to its healthy condition. But if the disease progresses without being checked, it may bring in its train specks, which may remain for a long time, and yet may in time diminish. We have also to fear the occurrence of capsular cataracts, hernia of the iris, staphyloma, leucoma, and the total loss of the eye, which may take place in two or three days.

Treatment.—We may divide this into the local or surgical treatment, and the hygienic and medical, which is especially efficacious at the commencement. The remedy *par excellence* is the nitrate of silver; the treatment by leeches and emollients generally fails, and is even injurious.

1. *Local treatment.*—At the very outset of the disease, we should at once drop into the eye three or four times in the twenty-four hours a weak collyrium of nitrate of silver—a grain and a half of this salt to half an ounce of water. If the disease has already reached its second or third stage, we may act more energetically, and pass between the lids a small brush steeped in a somewhat stronger solution of the same salt. We have often derived advantage from passing the solid stick of nitrate of silver rapidly over the inner surface of the lids, and then causing to trickle into the eye either water acidulated with several drops of chlorohydric acid, or salt-water. We thus change at once the excess of the nitrate into the insoluble chloride, which becomes detached from the mucous membrane. In this little operation we have to act rapidly, and especially take every precaution not to touch the cornea, which is already slightly altered. We sometimes recommend the application of one or two leeches in the neighborhood of the eye, at the same time that these cauterizations are made, though we have rarely resorted to them. We have derived benefit from employing irrigation of cool water over the eye, as recommended by M. Chassaignac, by means of a large funnel, filled with a quart of simple water, terminated by a capillary tube, which enables us to let fall into the eye a continuous threadlike stream of water. To practise this irrigation, we uncover the head of the child, which had previously been laid across its nurse's knees, and hold the lids apart, the head being inclined backwards, so that the water falls off on each side, and runs into a basin placed behind the head. By means of a sufficiently large piece of isinglass plaster applied around the child's neck, we may establish a gutter, which directs the water into the basin, and thus prevents it from running down the neck and over the shoulders.

After these irrigations, we immediately dry the head, which we cover up lightly, and make continuous applications of compresses steeped in cool water, and often renewed over the eye or eyes affected. We have had very good results from these irrigations, repeating them four or six times in the twenty-four hours. When we do not wish to follow this course of treatment, or hesitate to wet the child's head, we obtain benefit from the inunction around the eye, two or three times daily, over the forehead and the temple, and beneath the lower lid, of an ointment composed of corrosive sublimate, glycerine, and extract of belladonna, in proper proportions. We must combine with this, gentle purgatives, syrup of succory for the new-born, and for those that are older a very simple and very efficient prescription. Every hour, or every two hours, we give the child a powder, containing about one-twelfth of a grain of calomel to a grain and a half of powdered sugar. Besides this, we must continue for a greater or less time the collyrium of nitrate of silver, the composition of which must be varied according to the intensity and persistence of the disease. We may also return to cauterization of the lids with nitrate of silver, according to circumstances, being very careful in regard to it, when there is perforation of the cornea. Nevertheless, we need not hesitate to touch with the pencil of nitrate of silver, very lightly, certain ulcerations of the cornea and slight hernias of the iris.

As a result of these cases of ophthalmia, we sometimes find the cloudy cornea covered with vessels, which pass over it from the conjunctiva. Following the example of Prof. Sanson, we have made circular cauterization around the cornea, and have in such cases seen the cornea become again transparent. To perform this operation, we have always chloroformized our patient, and employed either the ring porte-caustique of Sanson, or a pointed pencil carried rapidly over the circumference of the cornea. Independently of chloroform, we must employ elevators for the lids, and have one or two assistants to hold the child properly.

2. *Hygienic and Medical Treatment.*—The hygienic treatment consists in modifying the diet according to the age of the little patient and the condition of the intestinal canal. If there are any febrile symptoms, we must diminish the nourishment; but if there is no frequency of pulse, we must give it the milk of the nurse, if it is still at the breast, and, if accustomed to another kind of nourishment, it is desirable that this should be continued. We must still take the precaution, in moist and cold seasons, to keep the child in an apartment properly warmed, according to the season, and not to take him into the cold air, if it is at all unpleasant. It is better that we should not keep the patient in a room made too bright by the light of the sun or by artificial light. The child should not, on the other hand, be kept in complete darkness, but in a medium

light. It is, above all, improper to cover the eyes with thick and tight bandages, a light piece of linen being sufficient, if there is photophobia. In fine weather it will be of service to the child to give it the fresh air, taking the precaution to choose a time when the pain from the disease is least, and carefully covering its head with a light veil.

There frequently remain on the cornea one or two spots, which in time may be diminished, and even when they are of considerable size they sometimes entirely disappear. We have found that by means of insufflation of calomel and sugar-candy into the affected eye, employed after the disappearance of inflammation, once only in the morning, with the dropping of a single drop of laudanum in the evening, we may hasten the resolution of these specks.

INCONTINENCE OF URINE IN CHILDREN. BY DR. GUERSANT (Surgical Diseases of Children, Chap. xxx.)

INCONTINENCE of urine is of frequent occurrence in children, both in girls and boys, being met with in the former quite as often as in the latter. It most generally dates from birth, and sometimes continues until the child is fifteen years or more old. In the earliest period of life the quantity of urine excreted, compared with the fluid drunk, is very considerable; the bladder contracts very often, the urine is very slightly colored, and there is no difference between that of the day and of the night. In children there is no, or very little, absorption through the bladder, the urine is abundant, and when the child is very young, defecation and urination are accomplished day and night almost without any desire for them. The resistance offered by the neck of the bladder and the sphincter ani is so slight that a single contraction of the bladder and the rectum suffices for the expulsion of the urine and the fecal matters.

At a later period, about the end of ten or twelve months, children have a sensation, which then first leads them to retain the fecal matters. The faculty of retaining the urine is developed somewhat later, after first dentition has been accomplished. It is then that the child, that does not retain its urine, is affected with considerable incontinence, if it also possesses its intellectual faculties. Otherwise, if it is idiotic or attacked with paralysis of the rectum or bladder, there would be symptomatic incontinence of urine, which would demand a treatment of the principal disease.

Causes.—Incontinence of urine in children is sometimes diurnal, at other times nocturnal, and this is the most frequent form. Whichever it may be, the cause may not always be the same, and if, as is often the case, there be weakness, this may be the real cause. In fact, we quite often see strong children, in good health, with nocturnal incontinence of urine. We may at first discover in them no general weakness, and the condition may depend on too frequent and sudden contractions of the bladder, as Desault thought. In others we find a lymphatic, scrofulous, or rachitic constitution, and the incontinence is then referable to this general cause. In the former, the cause is nervous irritability, and here, with MM. Bretonneau and Trousseau, we recognize a neurosis of the neck of the bladder. According to Dr. Mondière, who has written on this subject, many young boys, apparently of excellent constitutions, are subjects of this affection. We cannot, then, always refer incontinence to the same causes. Nevertheless, we believe that if the lymphatic constitution is often met with in children who urinate in bed, the incontinence would really arise from weakness, while in others, who are strong and robust, we would be induced to believe that profound sleep is a cause that may be invoked; or else the too frequent contraction of the bladder.

This disease, which is easy to recognize, especially presents itself in the impossibility of retaining the urine at night, and is characterized by the discharge of urine several times or only once or twice during the night; and this condition persists, no matter what may be done to prevent it. Even if we make children urinate when they go to bed, or wake them several times in the night for the same purpose, it very often happens that they will still pass their water in the bed in spite of all our precautions. In these cases we believe there is want of tone of the bladder, whatever may be the general constitution. This may be combated by the will while the child is awake, but sleep puts the whole muscular apparatus in a state of muscular relaxation.

Reviewing these causes, we consider that incontinence may be due to feebleness of the patient or a bad constitution, nervous irritability of the bladder, and, in some cases, profound sleep.

Prognosis.—This is a very annoying disease, but it is not dangerous; it is only tenacious. Generally it yields, at the latest, at about eight or nine years of age, and yet it is sometimes in exceptional cases met with at the age of puberty. After the employment of different treatments without success, it ceases with time. When it does cease, we must not believe that we have cured it; fever, an eruptive disease, a day of much fatigue or in which the child has perspired a good deal, may momentarily cause the patient to pass a night or two without having involuntary passages of urine, but two or three days afterwards the incontinence reappears. Thus, then, we must believe that there are some circumstances that may cause intermission of greater or less length. In all cases, if we can make a favorable prognosis in respect to its non-gravity, we can only be sure that the disease will not be tenacious. Very often it demands time for its cure.

Treatment.—We will not speak of the popular remedies, which are numerous, and to which we attach no importance. The treatment may be external or internal. The complaint being very rebellious, of long duration, sometimes only yielding with time, and not to remedies that are advised, it is right that we should employ successively different modes of treatment, and have recourse to both internal and external medication.

1. *External Treatment.*—If we can learn at once the cause producing the incontinence, we may employ one remedy rather than another; but as we cannot easily decide this, we employ successively the following external remedies. We may advise river or sea bathing in warm seasons, applications of cold water over the hypogastrium or to the perineum, cold lotions over the whole body morning and evening, shower-baths, douches of cold water on the loins and the posterior part of the pelvis, and cold immersion baths. In cold seasons, we would give the preference to tepid sulphur, saline, and gelatinous baths, and vinous or aromatic baths. These different remedies have given good results, especially if perseveringly used. The introduction of a catheter for a quarter of an hour, morning and evening, into the canal of the urethra, has been suggested; and cauterization of the neck of the bladder with nitrate of silver two or three times, several days apart, has also been practised. It has been advised that injections of cold water should be thrown into the bladder, and that this be repeated several days in succession. In some cases we may derive advantage from electricity. Compressors of the urethra have also been applied during the night, and by this method, proposed by J. L. Petit, the bladder has been forced to retain the urine. M. Jacquemin has employed them with success in young patients.

2. *Internal Treatment.*—We have used internally for incontinence, as others have done for a long time, tonics, cinchona, iron under different forms, antiscorbutics, preparations of iodine and iron, cubebs, ergotine, and strychnia. To complete this internal treatment, we must add a proper regimen, which should be tonic, principally good roast meats; the patent should drink but little water, but good wine; avoid soup in the evening, at

dinner; and eat but few beans and but little fruit that has a tendency to the urine.

After having resorted to all the external and internal means advised for incontinence of urine in children, we may say that the agents that have succeeded most frequently are cold baths, sea-bathing, sulphurous and shower baths, douches of sulphurous water, or of cold water, combining with it a tonic treatment, cod-liver oil and ferruginous preparations when the children thus affected are delicate, lymphatic, or scrofulous. But when they are not of such a temperament, but rather nervous, sea-bathing, sulphurous baths, and douches, often excite them without any good result following. We must subject such cases to the use of other remedies, either the preparations of belladonna or the employment of strychnia. The belladonna may be given in pills, containing the simple extract combined with the powdered root, in appropriate doses, morning and evening, gradually increased. The strychnia may also be given in pill form in combination with the black oxide of iron, evening and morning.

Whatever the treatment may be, we must persevere in it a long time—two, three, or six months. M. Trousseau, who has great confidence in the extract of belladonna, as prescribed by Bretonneau of Tours, and advised by Thomas of the same city, and Dr. Blache, recommends that it be given perseveringly, commencing with a moderate dose, and gradually increasing it, for several months in succession. We must not cease the use of belladonna just as soon as we have procured a decided amelioration, but continue it without increasing the dose, and only stop it little by little by diminishing the dose, until we reach that with which we had commenced.

This treatment should be modified according to the effects produced in different patients, either suspending it or abandoning it entirely.

ABNORMAL CICATRICES IN CHILDREN. By DR. GUERSANT. (*Med. News and Library*, August, 1872.)

WITHOUT speaking of malformations, congenital imperforations of natural openings, as of the nostrils, the labia, the anus, etc., or adhesions of the fingers and toes, we find in children many vicious cicatrices, characterized by the existence of a fibrous tissue, called by Delpech the inodular tissue. They may be prominent, adherent, depressed, or obliterating.

The *causes* are, as a general rule, wounds, scrofulous ulcerations, and burns, so frequent in children.

Abnormal Cicatrization after Wounds.—In children, as in adults, wounds may be followed by cicatrices of a more or less vicious character, and this often depends on the nature of the wounds, sometimes on the manner in which they are attended to from the beginning, and the circumstances which may complicate the treatment. Vicious cicatrices may be especially met with in wounds attended with loss of substance, in which nature always tends to approximate the edges. Thus, in a wound where a portion of the skin or of the subjacent soft parts is carried away, the cicatrix, left to itself, will be more or less contracted, and will bind down the part on which it is seated, in such a manner as to impede the movements, either in extension or flexion. Thus, in connection with the ginglymoid articulations of the knee, of the elbow, and the phalanges, we may observe wounds of this kind. We have seen children with a wound on the anterior part of the knee, incapable, especially if there be loss of substance, of exerting movements of flexion without constantly tearing the cicatrix; and when the wound was on the opposite side, of executing extension.

The method of preventing vicious cicatrices, which we must practise in advance, consists in the mode of treatment of the wounds themselves. By keeping the limbs as a general rule in continuous extension, or in a state of flexion, we may avoid abnormal contractions, or difficult or almost impossible movement. When these cicatrices, the results of wounds, are firm, we may hope that they will stretch in time, and that there will be no necessity to perform operations to re-establish the movements in the normal condition. In such cases the movements of extension or flexion made gradually may slowly overcome these vicious cicatrices. Finally, at the end of quite a long time, we may under some circumstances be compelled, for a flexed limb, which cannot be extended, to perform operations, as in the case of contractions from burns connected with the ginglymoid joints. Small wounds of the face are often met with, which have recovered with a vicious cicatrix, consisting only of a black tint through the whole extent or a portion of the cicatrix, as in powder wounds from cannon. We must not forget that the color of these cicatrices often results from having dressed the wounds with court-plaster of a black color, and that the preventive means consist in only using colorless plaster to promote union of wounds of the face.

Abnormal Cicatrices following Scrofulous Ulceration or Abscess.—We often meet with this kind of cicatrix in children. In them scrofulous ulcers of greater or less extent may destroy a large portion of the skin, on the face or on the neck, and produce loss of substance. These ulcerations are then like burns, and when they cicatrize, if their progress is not attentively watched, contractions occur, which reverse the lids, draw the lip down on the chin, sometimes the chin on the neck, the neck on the chest, etc. To prevent these abnormal scars, we should do everything to obtain broad cicatrices by combating the contractility of the cicatricial, tissue, by extending the affected parts in dressings, and by opposing the efforts of nature, which endeavors always to supply by the cicatrix the loss of substance. When we have been unable to prevent these contractions, they become similar to the contractions after burns, and often require operations analogous to those resorted to in such cases.

We also find in children cicatrices consequent upon spontaneous opening of abscesses, in the form of a swelling of greater or less length and prominence which rises above the level of the skin. These occur especially in the neck, and may be successfully treated by several methods, such as compression with leaden plates or pieces of agaric, excision with scissors and bistoury, and by caustics. Vienna caustic has been especially efficacious, applied carefully over these prominent cicatrices, and in swellings rising above the level of the surface of the skin.

Whatever plan may be employed in these cases, we produce wounds which must be watched with great care to prevent a recurrence. We must compress the new wound so that it may not become prominent, powdering it with alum, calomel, etc., frequently touching the granulations with nitrate of silver. We must do everything to prevent a recurrence, and one of the conditions of success is especially, as suggested by Dupuytren, not to be in haste to operate, the more so as in time these cicatrices occasionally disappear.

Abnormal Cicatrices after Burns.—We find that burns most frequently produce this inodular tissue, which is contractile and has been ably studied by Delpech and Dupuytren. Cicatrices from burns may be observed in all regions. We may counteract these contractions, which are of such frequent occurrence and chiefly in children, by dressings properly applied, by position, by the assistance of bandages and apparatus suitably adjusted, or by opposing the contraction of the wounds; but, in spite of the greatest care, we meet with a large number of burns which terminate with various contractions. Thus we often see inversion of the lids, obliterations of the auditory canal or the nostrils, adhesions or inversions of the lips, inclinations of the neck in different directions, approximation of the arm to the trunk, flexion of the forearm on the arm, turning in of the hand, adhesions of the fingers, adhesions keeping the abdomen closely applied to the chest, the thighs flexed on the abdomen, the penis adherent to the pubis or the scrotum, the greater labia more or less approximated, and abnormal cicatrices in the lower limbs similar to those in the upper.

All these cicatrices are prominent, adherent, depressed, or obliterating. As all of them give rise to difficulty in the movements and vicious positions, and prevent, in children, the development of the parts or movements, the indication is to operate, to prevent atrophy of the limbs in children, and especially to re-establish the functions, remedy obliterations, etc. We repeat, however, that Dupuytren advised that we should not operate too soon, and that we should wait until the cicatrices were firm.

We must often resort to operations which are unavoidable, and which we have had occasion to perform in children. These include transverse incisions and graduated extension or dilatation kept up for a long time, even after perfect cicatrization; the removal of the cicatrix; sliding of the flap, and autoplasty.

Whenever the cicatrices keep the fingers flexed, the hand flexed or extended on the forearm, the forearm flexed on the arm, the internal surface of the arm applied to the body, or the head flexed backwards or forwards on the chest, benefit may be derived from making over these prominent cicatrices, according to the method of Dupuytren, incisions through the contractions, either transversely or obliquely or V-shaped, then stretching the cicatrices thus cut in order to widen the incisions, but making the incision very slowly, more or less deeply, at the same time carefully avoiding the tendons, nerves, and great vessels. We must, as a dressing, employ apparatus and bandages to keep the wound separated during the whole duration of the new cicatrization. This demands a good deal of time and care, and often requires incision of fresh contractions which may be formed.

The method of Delpech, which consists in removing the cicatricial tissue as far as the healthy tissue, is sometimes, and even frequently preferable, when we are able to thoroughly circumscribe the whole of the vicious cicatrix, and to approximate the edges of the healthy skin in the opposite direction to the contraction formed by the vicious cicatrix. We have often employed this method when this has been possible, but we have abandoned it in all cases in which we could hardly cover completely the loss of substance, which is to be filled up by following this plan. When we can approximate them we should do so, either by separated stiches, serres-fines, or adhesive strips. Whichever method we adopt, that of Dupuytren or Delpech, we have always derived a great deal of benefit from keeping the wounds covered with fenestrated linen and charpie, and finally from constantly subjecting them to continuous irrigation, only refraining from the use of cold water gradually, and not abruptly.

When, in certain forms of vicious cicatrices, we can make a flap with the cicatrix, and by sliding this we can obtain the proper extension, this method has sometimes succeeded in our hands, by combining with it several transverse incisions through the parts which we could not raise with the flaps.

In vicious cicatrices which obliterate a natural opening, we have always employed multiple incisions; or, by means of the neighboring skin, we have sometimes made a hem with the skin united to the mucous membrane—the commissure of the lips, for instance. As for incisions, we have made them in the contracted orifices of the auditory canal, the nostrils, meatus urinarius, vulva, and anus, always taking the precaution to employ tents, catheters, and canulas, the use of which may be prolonged for a considerable time. As for autoplasty for the treatment of vicious cicatrices, it should be especially reserved for those of the face and for cases of contractions of the lids.

We have had occasion, in some cases, to treat cicatrices that were depressed and adherent over a bone, in partial osteitis of the frontal and the cheek bone,—in a word, subcutaneous bones. We have then operated with a tenotome introduced under the skin as far as the adhesion, which we divided transversely. By drawing on the skin, we destroyed the parallelism of the adhesion to the bone. In this manner the skin cicatrizes more thoroughly, and no longer presents its former appearance, that is to say, the depression.

There is another form of abnormal cicatrix which is observed quite as frequently in children, a cicatricial contraction of the jaws, usually consequent on burns, gangrene of the mouth, etc. Formerly all the methods consisting in the division of the contractions causing the adhesion of the cheeks to the lower jaw, combined with the introduction of foreign bodies of various kinds into the mouth to prevent a recurrence, failed with us as with our predecessors. All other surgeons, as well as ourselves, have had very incomplete results from excision of cicatrices in the mouth, as proposed by Delpech, incisions as practised by Serres, of Montpelier, or wooden wedges between the jaws, suggested by Gensoul after excision of the contractions. The plan of Essmarck, which laid down the principle of the resection of the anterior portion of the jaw, and which I have not practised, appears to me of very little advantage, if I may judge of it, not by the results of several foreign surgeons who claim to have been successful with it, but by the attempts made by some of my colleagues of the Société de Chirurgie, who have had nothing but failure or partial success not of a kind to encourage them to repeat them. Nevertheless, if called to a patient who had his jaws so tightly pressed together that he could only take fluids, if he was wasting away on account of his nourishment being restricted to liquid or feculent substances, and desired an operation to enable him to pass between his jaws solid substances, meat, etc., I would decide to resect a part of the middle portion of the lower jaw, according to the plan of Essmarck. I believe it, however, to be prudent, before this resection, to attempt to divide the contractions, to introduce wedges between the jaws for a long time and frequently repeated, and, after excision of the bands, plates between the internal surface of the cheek and jaw, worn as long as possible.

CLINICAL LECTURE ON INFANTILE PARALYSIS AND ITS RESULTING DEFORMITIES. By RICHARD BARWELL, F.R.C.S., Surgeon to Charing Cross Hospital. (*Lancet*, Feb. and April, 1872).

GENTLEMEN: Before showing you one or two cases and reading to you certain short extracts from my note-book, it seems desirable that I should define the class of malady which I intend to bring before you. Infantile, like adult, life is liable to certain diseases of the brain and spinal cord which result in loss of power in one or more limbs. But, besides these, the infant is subject to a form of paralysis unattended by any symptom of illness—certainly of severe illness; and this, the class of case I propose for your study, being peculiar to the infant, alone deserves the name of "infantile paralysis." Other paralytic maladies, whether occurring in senility, in the prime, or in infancy, should be classed in the categories of meningitic, myelitic, lead-poisoning, traumatic, or other form of disease. But to enable us to separate one thing from a heap of others, we must have means of recognizing that single object whenever we may see it. Hence there devolves on me the ungrateful task of making a definition out of mere negatives; for the typical, and, in my experience, the common, form of the disease is, that the child should be put to bed perfectly well at night, and next morning be taken up with loss of power over a limb or part of a limb, yet otherwise quite well, or only very slightly ailing.

For example: This child, Eva H., aged thirteen (March, 1871), looks extremely healthy, except that she is lame from paralysis of the left leg. Her mother, an intelligent, clear-headed woman, says: "When she was about eighteen months old I took her out of bed one morning and put her on the floor to walk. She tumbled down. I thought she was stupid, and put her on her feet again. She fell at once, and I then found her leg was paralyzed. She was not at all ill or fretful, either the night before or that morning; but I think that side of her body was perhaps a little tender."

Agnes P., whom you have often seen, was, when she first came, nine months old, as plump and as healthy a baby as ever I saw, except loss of power in the deltoid of the right arm. The mother says: "Two months ago I took the baby out of bed, and it did not move the arm. I showed it to the doctor, and he said the child must have been hurt. I do believe the girl I had then lifted it up by the arm; but the baby did not cry either the night before or that morning more than usual. She always cried when she was being undressed and washed. I observed no difference in that, and she seemed quite well."

One more history from my note-book:—

Louisa R., brought to me in April, 1870, when seven years and a half old, with foot deformity resulting from paralysis. Her mother, an active-minded and very acute woman, says that one very hot day, when the child was about eight months old, she was put asleep under a tree on the lawn, and on a damp cushion. The next day she was taken up with the right leg paralyzed. The child had not then any sign of illness whatever, and always has been, with that exception, a strong, healthy girl.

Of such cases and histories I could give you almost an unlimited number. Some attacks may have been preceded for an hour or two, perhaps even for a day or two, by some slight disturbance, fretfulness, a hot skin or mouth, even a slight convulsion. On the morning of the discovery there may be some evidence of pain in the affected limb, some feverish disturbance, and the disease itself may affect a larger or smaller portion of the body. But the more the history and concomitants depart from the type which I have given above, the more any disturbance approaches absolute illness—especially if convulsions have been frequent and severe—the more the stricken regions resemble the relationship of hemiplegic or paraplegic parts, the more likely is the case to be an example of myelitis or meningitis, and the less likely to belong to the pure infantile paralysis, which, as you have seen, does not exhibit a single symptom of central nervous disease.

I feel bound to insist strongly on this distinction, because medical opinion has of late years more and more agglomerated around the idea, fallacious in origin, and in result disastrous, that all these cases are dependent on cerebral or spinal disease. Heine, Fliess, Laborde, Radcliffe, and many others, have upheld this notion; and I must shortly point out what essential differences separate this disease from spinal affections. But first, as to pathological appearances. Only seven cases of anatomical investigations have been published. In four of these nothing was detected; in one, that of Dr. Fliess (*Journal für Kinderkrankheiten*), was found a congestion which, emanating from the gums of the teething child, was continued on to the membranes of the cord. It need hardly be pointed out that the preconceived ideas which aided this description are more easily comprehensible than the anatomy of the congestion. To the other two post-mortem examinations I must unfortunately also take exception, for the two cases which form the ground-work of Dr. Laborde's treatise, "La Paralysie (dite Essentielle) de l'Enfance," are cases respectively of myelitis and meningo-myelitis, with their characteristic histories and symptoms, and do not belong to the disease under consideration. The absence of illness and of danger to life renders it improbable that morbid anatomy will ever furnish a clue to the causality of this disease; we must, at all events for the present, be content with studies from life.

The children we have now to do with are not ill, have no severe convulsion, insensibility, nor pain; therefore no disease marked by severe symptoms, such as myelitis or meningitis, can be present. But a congestion of the cord does not give rise to any attack of such suddenness and severity; it may also be supposed to vanish at death after having produced paralysis in life. There is, too, a certain similitude between congestive and infantile paralysis—such as immunity of the respiratory muscles, bladder, and rectum. Nevertheless, when the condition of a patient with congestion of the spinal cord is compared with a case of infantile paralysis, the observer will not fail to mark a vast difference between the plump limber limbs of the one, and the cold, shrivelled, flaccid muscles of the other. A further investigation into the condition, more especially by various modes of electricity, will render prominent other and more radical differences. A rapid view may best be given by arranging these into opposite columns, as on next page.

. These differences are very marked, and so important that the first six alone appear to separate nosologically the one disease from the other; but it is to the last three that I would especially direct attention. They are physiologically connected in infan-

SPINAL CONGESTION.*	INFANTILE PARALYSIS.
Paralysis incomplete—always at first, and generally throughout the case; it tends, however, to deepen.	Nothing can be more utter and entire than the loss of power at the very commencement; it tends, however, to lighten.
Generally paraplegic in form at the end, if not at the beginning. Usually one leg is attacked first, then the other. The malady becomes more extensive as it goes on.	Paraplegic form is not usual at the commencement, still less afterwards. When the disease has attacked one part, it never subsequently affects another. It is most extensive at its commencement.
Tingling in fingers and toes.	I have never been able to detect the slightest sign of pain or discomfort. In a few cases there is a little and a doubtful increase of sensibility to touch.
Shortness of breath not infrequent.	No alteration ever observed in breathing.
Fluctuations towards better and worse occur in all cases; sometimes these are rather frequent.	No change, backward or forward, ever occurs; if the patient gain a step, he does not lose it again. (Effects produced by treatment are not referred to.)
There is a decided tendency to relapse, even after the patient appears to have got well.	No tendency to relapse. I have never seen nor heard of a limb being paralyzed a second time, nor of another limb being the subject of a second attack.
Reflex irritability is, according to some authorities, increased—according to others, decreased.	Reflex irritability is so utterly annihilated as to leave no room for variety of opinion.
No wasting of paralyzed muscles.	Extremely rapid wasting of paralyzed muscles, setting in very quickly after the attack.
No marked impairment in affected muscle of electro-contractility.	Remarkable impairment of electro-contractility—indeed, total loss of response to the induced current.

tile paralysis. The induced current ceases entirely to call forth any contractions of the paralyzed muscles in from twelve to seventy-two hours. At the same time there is developed an abnormal sensibility to the voltaic current. Now this peculiar behavior never occurs in cases of central paralysis, but is exactly what happens when a nerve supplying a muscle has been divided; moreover both muscles—*i. e.*, the one whose nerve has been cut and the one paralyzed by this malady—lose all excito-motor contractility. But when a nerve of a warm blooded animal is cut, the muscle, at first flaccid, becomes very hard and strongly contracted as long as the wound remains unhealed. When this is well the muscle relaxes. The nearer to the spine be the wound, the harder and more contracted will be the muscle, and the less rapid is the loss of sensibility to the induced current. If we divide the nerve close to its entrance into the belly of the muscle we find hardly any rigidity, quick loss of galvano-contractility, and rapid wasting. Therefore, if we could go a little further and destroy the nerve absolutely at its distribution among the muscular fibres, we should, in all probability, carry the above three characteristics of infantile paralysis—namely, flaccidity, irresponse to faradism, and wasting—as far as they are developed by the disease itself.

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* The symptoms of spinal paralysis are taken from Reynolds's "System of Medicine," vol. ii. p. 663, *et seq.*

It appears impossible to escape the conclusion that infantile paralysis is a malady purely peripheral, affecting the ultimate nervous fibrillæ of distribution in the muscular elements. I am anxious, gentlemen, that this conclusion be not pushed too far. I am not supposing or imagining any degenerative or structural change in the nerve-fibres as the cause of this malady. The attack is too rapid and too quickly succeeds exposures to warrant such an idea. The essence of the disease probably lies in some subtle derangement of relationship between ultimate nerve and ultimate muscle-fibre; perhaps from some inflammatory, but more probably from a chemical or nutrient change. In after years any amount of tissue degeneration may occur.

Allow me now to refer to a former remark, and to explain its intention. A few paragraphs ago I said that the prevalent notion concerning the central origin of this malady was in its results disastrous, and in saying this I refer especially to the effects produced by loss of time. In the first few hours of the attack the affected muscles are still sensitive to the faradaic or interrupted current. This sensibility rapidly declines, and I am not aware that any use of this force would prevent its extinction. After a time, which varies in different cases, there is established a sensibility to the voltaic or battery current, and it is upon this that we must rely as our chief aid in the treatment of the disease; and a judicious practice, by keeping alive this contractility, preserves the muscle from extreme wasting and degeneration. To wait, with temporizing treatment, or with none at all, until this sensibility is, in its turn, extinct, is the disastrous result of the belief I have combated. Delay in applying the treatment pays a heavy percentage in subsequent difficulty and duration. Very few cases get well of themselves, and tissue change, as evidenced by the wasting, begins almost immediately. If, then, a child, within twenty-four hours of its first attack, do not already show marked signs of recovery, not merely in one or two, but in every muscle, the state of the case should be carefully and rigorously tested by faradization, and again in another twenty-four or forty-eight hours. Any muscle which, at the end of thirty-six or seventy hours, has ceased to respond, or responds more feebly than at the last examination, will not of itself get well, and to delay treatment is in all probability to condemn the patient to a crippled existence. No disease is so obstinate when old; but while still new, few are more amenable to treatment.

A malady which has received the name of the "temporary paralysis of Kennedy" places the immediate treatment of the disease we are considering in a most unenviable position; while, on the other hand, a belief in the frequency of such transient paralysis often prevents any clear and decisive action for days, perhaps weeks, after the first attack. It is a very thankless task to treat a paralyzed child with all care, and then, when the patient recovers, to feel that it may have been one of those cases which would have done well without our aid. Nevertheless, this is far better than, believing in the temporary nature of the disease, to temporize, to delay still a little while longer, and at last to find the limb wasting, and to discover that by loss of time we have also lost, or all but lost, the chance of regaining a useful limb.

My conviction, taken from a large number of cases, is, that the temporary paralysis is very rare, the true infantile (non-central) paralysis only a too common disease. The distinction in the first few hours is impossible, but in from twelve to thirty-six hours it becomes clear and indisputable. When, therefore, first called to a paralyzed child, it is necessary to ascertain all concomitant and pre-existent circumstances. If there be or have been no illness, no prolonged or severe fits, no thermometric elevation either general or merely cephalic, nor other sign of central mischief, the medical man will examine the state of the secretion, ascertain the absence or presence of worms, the condition of the mouth and other parts which give rise to reflex paralysis,* and if he find there no clue to the cause of the disease, his next object will be to discover whether the case be one in which the condition is likely to continue, or one in which the loss of power is merely temporary. For this purpose, as well as for subsequent treatment, he must have recourse to different forms of electricity, the use of which should, if possible, commence between the twelfth and thirty-sixth hour of the attack.

To gain information from galvanism it is necessary to use two sorts of battery—the one a single or double cell, with an induction coil and a connection-breaker or hammer; the other a simple galvanic apparatus for producing a constant current of great tension and small quantity. Although for the first-named or induced current and battery with a small coil and means of regulating will do, yet Ströher's large double-celled battery is by far the best apparatus I have yet come across. The many means of regulation give great power of minute adjustment; the connection, by standards, of the secondary current enables us to use the least painful stream with the greatest effect; and the attachment of the striking plate of the hammer to a spring enables us to make the widest possible interruptions. For the constant current a battery made originally for me by Messrs. Weiss is the best I have yet found. It consists of fifty elements, three-quarters of an inch wide by two inches and a half long. In a certain number of cases many less cells will answer for treatment, but a smaller battery would, for purposes of diagnosis, fail in so large a portion of cases as to be almost useless.

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* Certain conditions of the genitals will form the subject of a future lecture.

The behavior of muscles to one current and to the other, and the alternation of such behavior, afford, when properly studied and understood, a mode—indeed, the only mode—of diagnosing the condition and prognosing the future of an infantile paralysis. In the form of this malady (the only paralysis really peculiar to infants) which is not cerebro-spinal or reflex, sensibility of the muscles to the induced current rapidly declines and becomes extinct. This phenomenon commences between the twelfth and thirty-sixth hour. It is usually complete within four days. If, then, the induced current have been used twelve hours after the occurrence of a paralysis not heralded by severe illness or accident, and the muscles be found tolerably sensitive, we must remain very doubtful as to the nature of the case. If within twelve hours more the sensibility have diminished, we have to do with a case at all events of no temporary paralysis. If in a few more hours faradaism produce no muscular contractions, we may feel sure that the disease is one of peripheral origin.* If about the time when the power of the induced current decidedly declines—perhaps two or three days after its disappearance—the muscles begin to respond with abnormal sensitiveness to the constant current, but at other times remain flaccid, the case is undoubtedly true infantile paralysis, which will not get well save by careful and more or less protracted treatment. If, however, the case be brought under skilled management sufficiently early, and treatment carried on with patience and watchfulness, one may in most cases set every muscle free, and this merely by the proper use of galvanism and faradaism. Hence I must be permitted to speak very strongly on the impropriety of postponing treatment under the impression or the hope that the case is but temporary. A muscle or set of muscles which do not recover power in three days will scarcely ever of themselves regain any useful amount of action. If we attack paralyzed muscles while they are still sensitive to galvanism we may in a few weeks restore power; if we wait till not only the induced, but the constant current has lost all influence, years will barely suffice to restore any action; to do this other means, as the usual employment of potent drugs, become necessary, and then the result is problematical.

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* In an article published by me last year in "St. Thomas' Hospital Reports," I have proved very clearly that infantile paralysis is no central disease—neither congestive, inflammatory, nor nutritive.

As to the mode of galvanism I shall say in this place but very little, as by relating the details of a case—somewhat rapid in its success, it is true—all essentials may be taught. Certain facts and conditions only need be pointed out—firstly, the necessity of having all the instruments in good order and free from rust; secondly, of never using more power than absolutely necessary, and especially with children, avoiding pain or alarm as much as possible; thirdly, since every muscle has a point where even a feeble current may cause contractions, while everywhere else a current strong enough to produce severe pain will have no effect on the organ, these points should either be so studied that there never is a blunder about the place to be touched, or else the practitioner must construct a chart, and, while using galvanism, have it in front of him.* Lest the term "constant current" mislead, it will be well to explain that the muscular contraction does not depend on the quantity or intensity of the current at any particular moment, but on alternations and amount; hence the twitch only takes place on closing, occasionally also breaking the circle, and not while the stream is flowing uninterruptedly through the organ. "Constant current" is, therefore, a misnomer; the word should have been "direct current," had not such term already been appropriated to another use.

Emma T——, aged four months, was paralyzed during the night of May 10th, 1870. On the 15th she was brought to me —*i. e.*, about one hundred hours after the occurrence. The child was put to bed perfectly well on that night. She had cried a little unusually on being bathed, which the nurse attributed to sleepiness. She also seemed well the next morning, save that the left leg was completely paralyzed, but was in no wise either tender or painful. I found no tenderness anywhere; no heat, thermometric or otherwise; no sign of ill-health or disease. She is rosy, laughs easily, and has evidently suffered nothing. Previous to my seeing her the patient had had an emetic administered, and had been purged. The excretions are in perfect order.

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* A number of charts in Ziemssen's work—although they contain, I think, some errors—would answer the practitioner's purpose extremely well.

I tried faradaism, gradually increased to the limits of the bearable; neither with the primary nor with the secondary current could the slightest twitch be produced. The battery current with fifty cells produced no movement. In sixteen hours I tried the battery current again; and a third time in twenty-four hours more—*i. e.*, 140 hours after the attack. On the last occasion slight movement in the flexors of the leg, and a more doubtful movement in the extensors, was produced.

May 24th.—Every twenty-four hours each muscle has been separately galvanized. The flexores cruris—the deep layer at the back of the leg—act energetically to thirty cells; the extensors both of leg and foot, and especially the adductors femoris, respond more feebly to fifty cells. The sural muscles do not act at all, but let the current go right through them to the deep layer without showing a sign of life. There is neither voluntary power nor faradaic irritability in any muscle. An elastic band is fixed to the shoe, so as, without restraining it, to keep the foot more or less at right angles to the leg. The electric occurrences are these: At an uncertain time, during the first 100 hours, faradaic irritability ceased; at the 120th–130th hour galvanic irritability in certain muscles commenced, and has increased. Other muscles then became galvanically irritable; and all respond more or less, except the sural muscles. Prognosis guarded, but by no means bad.

June 3d.—The muscles are now all sensitive, except the sural; these, though they respond slightly to the current, are sluggish, and act but little.

July 14th.—The response of all the muscles to galvanism has been becoming more feeble and uncertain. This day Stohrer's battery was used; and I was pleased to find all the muscles respond, and surprised to find that the sural muscles, which had never acted well to the constant current, and had also like the others refused to answer to faradaism, responded now to the coil as well as any. The prognosis now given was perfectly hopeful; patience and perseverance all that are required.

Dec., 1870.—I took occasion to examine this child. The leg is smaller than the other, and about one-third of an inch shorter; but she can move it in every direction; and in walking or running the limp is barely perceptible. I ought to say that the elastic force was, during three months, used on one side of the leg to prevent a threatening deformity; but this part of the case belongs to another division of our subject.

CLINICAL NOTES ON THE ELECTRIC CAUTERY IN UTERINE SURGERY.*

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[*The great value of this paper must be our excuse for devoting so much space to it.*—ED.]

A FEW months ago, at a meeting of the New York Obstetrical Society, Dr. Chamberlain reported a case of epithelioma of the cervix uteri, in which, though the affected part had been very satisfactorily removed by galvano-cautery, the disease had nevertheless reappeared within five or six weeks after the operation. Other instances also were referred to, where an equally unsatisfactory result had followed this method of operating; and the prevailing opinion of members present appeared to be that the removal of such outgrowths from these parts, even by the cautery, offered but little encouragement as a curative measure, and that reported successes were at best exceptional, or of rare occurrence, if not doubtful as to diagnostic accuracy.

Indeed, whether on account of disheartening experiences then related, or the well-known difficulties attending the management of galvanic batteries, there seemed to be, if not a disposition to doubt the utility of resorting to any operation in such cases, at least a strong desire to have the subject more fully presented. With a view to supply this want in some, and especially as I had referred more encouragingly to my own observations in the use of the galvanic cautery, I was requested to furnish a paper, which was read at a meeting of the Society held in June last.

Experiments undertaken over two years ago, and noticed on the occasion referred to, have been steadily continued during this interval, and cases of great interest, in which I have operated by this means, have since presented themselves.

Thus, while I have succeeded in devising a compact and effective galvanic battery, suited to every surgical emegency, and yet comparatively simple in its management, together with improved electrodes and platina instruments, ample opportunities have been afforded from time to time for practically testing the value of each novelty as suggested. This is my apology for delaying the publication of my paper until this time.

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* Reprinted from the *Medical Record.*

No surgeon who, having witnessed for the first time a successful intra-vaginal operation by the galvanic cautery,—for example, the removal of a cauliflower cancer, or a fibrous polypus from the cervix uteri,—can have failed to appreciate the many advantages offered by this safe and rapid, yet bloodless proceeding, over all other means heretofore at our command. He might also feel astonished that so admirable a method of conducting these and similar operations had not been more generally adopted by gynæcologists especially, or the subject even assigned a few pages in works on that specialty; for a late edition of one of the most practical, if not the very best treatise on diseases of women, is in this particular noticeably defective.*

A very little reflection, however, will soon convince him that, after all, neither authors nor any one class of practitioners in particular are much to blame; for even the laws by which galvanic electricity is governed, not to speak of its adaptation to the most delicate and difficult operations, are nowadays but seldom made the subject of scientific inquiry either by candidates for medical honors or practitioners generally. And yet, strange as it may appear, the history of galvano-cautery, though consisting for the most part of clinical fragments merely, or an occasional report of some chirurgical achievement, covers a period of over a quarter of a century. It is true, but little was heard during the first few years of the new service which the thermal power of current electricity was being made to render; for prior to 1850 almost the only surgical uses which it seems to have served, with the exception of Crussel's operation for a fungus hematodes, were the removal of nævi, and the destruction of dental nerves. It may be safely asserted, however, that we are indebted for most of what is even yet known of galvano-cautery to the ingenious devices of Marshall and Ellis, in England, from 1850 to 1852, and the subsequent publication, in 1854, of Middeldorpff's more brilliant exploits in Germany. Since the latter period, many interesting reports of cases by Semeleder, Newman, Zsigmondy, Braun, Von Grenewald, Rudolph Voltolini, and others, have appeared, but there is nothing in the valuable yet only corroborative experiences of these observers to warrant a doubt that the claim of priority in originating all that is of practical value in electro-cautery, belongs of right to those first named.* To Ellis, especially, is due the credit of first suggesting the spiral cauterizer; Marshall and Middeldorpff, contemporaneously, though independently, devised the loop; while all clearly and distinctly indicated the various lesions likely to be benefited or cured by the employment of their several contrivances.

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* The two pages devoted to galvano-cautery in the work of Professor Thomas, to which I refer, must have at least one good effect,—that of inciting the reader's desire to know something more of the subject.

It is not a little surprising, therefore, to notice how few surgeons there are, comparatively, even among gynæcologists, who have adopted the practice, or given the subject any attention whatever, though more than twenty years have now elapsed since its claims were so attractively demonstrated. That this omission arises, in a great measure, from the want of any reliable guide to a practical study of the subject, there can be little doubt; because, as has already been intimated, any one who desires accurate information, or such definite rules and directions as will enable him to operate successfully by means of the electric cautery, will seek such aid in vain among the gynæcological records, or other medical literature of our language at least. The brief allusions met with in standard works on medical electricity and electrolytic surgery, will avail but little in a practical sense, beyond what relates to the elementary principles of electro-physics. As for practical hints, and that particular kind of knowledge so needed for conducting important cautery operations, there are but two ways in which such can be obtained: either by being fortunate enough to have repeatedly witnessed and closely observed such operations, or through laborious experimental research and no trifling pecuniary outlay. By this latter path I have been obliged to travel; and though fortified by a tolerably exact knowledge of electro-physics, and constantly aided by material for clinical study, yet many disappointments and difficulties of a perplexing nature have had to be at first contended against.

This statement is made, not with a view to herald my own industry or perseverance, but merely as suggestive of additional reasons why galvano-cautery, which is destined at no distant period to play a most important part in gynæcological practice, is so little understood, and so seldom resorted to. It is also reasonable to infer from what has been said, that many of the unsuccessful attempts to operate by galvano-cautery of which we hear, as for example when the battery is said to have "given out" at a critical moment, have been due less to imperfections in the apparatus, than a want of experience and inadequate knowledge of electro-physics on the part of the operator.

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* In this country, also, many important galvano-cautery operations have been performed within the last few years by Drs. Noeggerath, Thomas, Gulcke, Sims, Jacobi, and others, but few of which, however, have been published, so far as I know.

It will be found impossible to construct any galvano-electric apparatus which may not occasionally become defective, either by accidental displacement of some of its parts, or imperfections resulting from use. The well-ascertained laws, also, in accordance with which the electric fluid is generated and set in motion, demand the strictest observance, and will tolerate no innovations incompatible therewith, either as regards the relation of negative and positive elements to each other, and their metallic connections, or the quantity and kind of fluid or fluids by the aid of which electro-motive force is to be obtained.

Consequently no surgeon can hope to succeed in the practice of electro-cautery unless, when difficulties arise, as in case of failing to obtain sufficient heat, he is not only competent to fully appreciate and understand the nature, causes, and extent of such interruptions, but also possessed of a certain amount of mechanical aptitude, so as to enable him to remedy the defect. Indeed, I have no hesitation in stating that these conditions are essential to success, and cannot be safely dispensed with; because, though certain rules may be laid down concerning the general management of batteries, and even specific directions given as to the proper manner of conducting cautery operations, nothing short of a tolerably exact scientific knowledge of the whole subject will suffice to overcome unavoidable obstacles.

Hence, it is not unreasonable to infer, that had these facts been earlier recognized, many of the troubles and disappointments reported in the practice of eminent surgeons might have been avoided, nor would a quarter of a century have elapsed ere galvano-cautery, instead of being understood and practised by comparatively few, had become the usual, and not the exceptional means by which certain diseased conditions might be cured or relieved.

Before proceeding to describe such a battery and instruments as I have found best suited to the requirements of surgical practice, some reference to the several kinds of galvanic apparatus used and recommended by others seems called for. Nearly three years ago I assisted Dr. Noeggerath in removing an epithelioma from the cervix uteri of a lady whose case will be described hereafter, and the battery used on that occasion was a zinc-carbon one, such as that first invented by Bunsen in 1843. I subsequently operated with this instrument, and was much pleased with its action in both cases, though in the latter my patient, who had a large fibro-cellular polypus attached by a thick pedicle, lost much blood, owing to the vascularity of the parts, but more particularly because the wire used was, as I believe, too fine, and perhaps also in some measure on account of traction kept up on the tumor. I remarked then to gentlemen present that vascular parts could not be safely cut through except by a much thicker wire, which, I was informed, the battery, though a very large one, would not sufficiently heat.

My next few operations were conducted by means of a powerful Grove battery, the only distinctive difference being that platina instead of carbon is used as a negative element, and in every respect similar to that used by Professor Middeldorpff.

This apparatus, though beautifully constructed and costly, was soon abandoned, however, mainly because of the great trouble and care needed in working it; for, like the one first used, strong nitric acid was required for the inner or porous cell, and on account of which perplexing accidents are often unavoidable. Nevertheless, being favorably impressed by what I had already observed, and influenced by the opinions of authorities against other than constant batteries, I determined to provide myself with another 8-cell Bunsen, similar in principle to that of Dr. Noeggerath already referred to. After a few trials, however, I found it quite insufficient to heat wire of such length and thickness as would insure against hemorrhage in any but trifling operations. This defect, coupled with the danger in handling large quantities of strong nitric acid, and the suffocating nitrous fumes resulting from chemical action, not to speak of the trouble and time spent in filling, emptying, and cleaning the cells, induced me to abandon every kind of so-called constant, or two-fluid battery.

The claims of Stohrer's four-cell one fluid carbon-zinc battery were next fully considered, but on account of its huge dimensions, being less portable than any of those already tried, I hesitated, and concluded to procure the French contrivance, known as the "Grenet battery." This little apparatus is composed of eight zinc and six carbon plates, four of the former being united and connected with three of the latter, similarly joined, the other sets of three and four zincs and carbons, each unitedly forming the negative and positive poles.

In this manner the whole is made to act as *two* powerful cells. I have operated frequently with this instrument, and can fully endorse the views expressed regarding its power and certainty of action by Dr. Garrett, of Boston, the only author, so far as I know, whose opinions as to its worth seem to have been derived from a practical knowledge of its capacity. After an extensive practical acquaintance with this battery it is a little amusing to recall the description given of it by Meyer, in his work on "ELECTRICITY IN ITS RELATIONS TO PRACTICAL MEDICINE," as follows:—"After the battery is dipped into the fluid *as high as the upper edge of the carbon-plates*, a **Y**-shaped tube is fastened to the rubber tube, and to this a pair of bellows; soon the fluid is thrown into commotion, and after *four or five seconds* the platinum wire which is secured to the conducting wires going from the zinc and carbon poles, glows." None of which is correct, because neither this nor any other such battery should ever be dipped "as high as the upper edge of the carbon-plates," no bellows is needed, and the platina requires no longer time to become incandescent than when attached to any other battery that I have ever seen. I have never found it necessary to use the bellows attachment, the occasional raising and re-immersion of the battery being all that is needed to perpetuate its power. It has not, however, that "*intensity*" arrangement which many operations demand, and hence its sphere of action is too limited to be universally serviceable in practice. Moreover, the lead-lined box which contains the fluid is too large to be conveniently portable, and there is no mechanism provided for raising the battery out of the acid solution when not actually in use, and keeping it suspended so as to drain the plates, arrest chemical action, and thereby control and preserve its heating capacity.

Being, on the whole, tolerably well satisfied with this first specimen of single-fluid battery, my next desire was to obtain one of a similar nature, but, if possible, still more powerful and less limited in its sphere of action, yet as moderate in size as would be consistent with these additional requirements.

A battery combining in a very great degree all these qualities was therefore constructed at my request by Mr. Charles T. Chester, 104 Centre street, whose thorough practical acquaintance with electro-physics is so well known, and to whose politeness I am greatly indebted for many valuable hints and suggestions. This instrument is composed of eight pairs of carbon and zinc plates, each measuring about six by nine inches, and so arranged that the whole could be made to act either as two cells when *quantity* is desired, or four cells as when greater *intensity* is needed to overcome resistance. If short and heavy, or flattened platina is to be heated, certain binding screws, marked two, are turned down, while those marked four are to be raised; and when a long and comparatively thin wire, such as is used for looping purposes, is required, this order of adjustment is to be reversed. By this useful contrivance the apparatus can be made to meet every want, and in my hands it has never failed. As an evidence of its power, moreover, I may state that five inches of number sixteen wire can be made incandescent, and in the elements can be easily raised or lowered by means of a windlass attachment, its management is simple, and as a whole is far superior, in my estimation, to the more clumsy and costly apparatus of Stohrer.

With all these attractive features, however, it also is too bulky and heavy to be conveniently portable, and consequently not so well adapted to the requirements of private as to hospital practice. The quantity of fluid required to bring it into action is three gallons, prepared by dissolving three pounds of bichromate of potassa in ten quarts of boiling water, to which, when cool, two quarts of sulphuric acid are to be added.

It will be observed from these remarks that, though double-celled batteries, whether composed of the Bunsen or Grove elements, are constant in their action, they possess no other attractive characteristic warranting a preference over the more simple and manageable single-fluid arrangements. Indeed, this supposed indispensable quality as to constancy may be conveniently dispensed with, for it is no more an essential requisite in a battery for surgical purposes, than would be perpetual motion in a time-piece.

Authorities on electro-surgery, as a rule, either caution us against the employment of these batteries, simply because they are not continuous in their action, and liable to give out at a critical moment, or furnish such an incorrect description of their *modus operandi* as to deter many from using them. They seem to entirely forget, however, or at least fail to suggest that there can be no reasonable object whatever in immersing a battery before its action is called for, or allowing it to remain so unnecessarily long, and during intervals of inspection which ought to and must occur during every important cautery operation. Another very common and mischievous fallacy is to suppose that by disconnecting one or other of the conducting cords, or otherwise breaking the current, as, for example, by means of a slide in the cautery-handle, we thereby arrest the waste of thermal power. Breaking the current, however, does not wholly arrest chemical action; and as prolonged immersion, even with this precaution, seriously impairs electromotive power, no battery of this class should be put in contact with the fluid until heat is actually required, or allowed to remain so during operative interruptions, or one minute after it has served its purpose.

DESCRIPTION OF BATTERY.

Fig. 1 is a correct representation of a battery devised by me over twelve months ago, and employed in some of my most important operations.

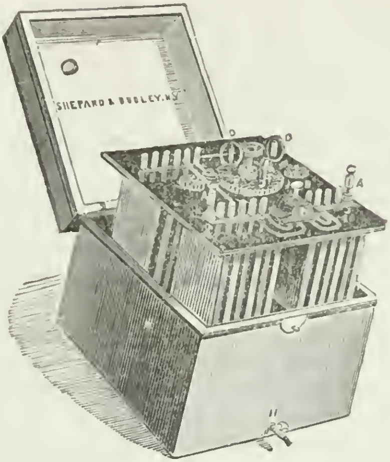

FIG 1.

It consists of twelve carbons and twelve zincs, each 3 by 5 inches, combined and arranged so as to represent four sets or cells of three pairs each. In this orders the elements are securely fastened by nuts and screws to a hard rubber platform 7½ by 8 inches in surface, and one-quarter inch thick; and the combinations and connections effected by means of narrow strips of copper annealed and nickel-plated. In the centre is a cog-wheel 3 inches in diameter, which, on being turned by means of an upright handle, causes the two water agitators to revolve.* Near the front edge of the platform is fixed what might be properly denominated an *electro-motive* or *electro-tension disc*, by the aid of which the whole character of the battery may be changed in a moment, so as to represent either two cells, as when quantity is needed, or four cells when great resistance is to be overcome, such as in heating a long thin wire.

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* The object of this arrangement is to increase the power of the battery when, owing to continued use, as in tedious operations, the fluid may become exhausted.

It is very seldom needed, but as an example of its value under certain circumstances, I may state that half strength fluid—that is, one part of water and one of fresh ordinary battery fluid—can be made, by agitation in this manner, to produce nearly, if not quite, an equal heat with the strongest fluid without such agitation.

The latter simple contrivance has rendered this battery, in my hands, equally reliable and powerful in every emergency, being capable of heating (white) from 6 to 8 inches of No. 16 wire (Stubb's gauge), or over 12 inches of No. 21, the last mentioned being the size which I always select for looping purposes. Passing through the centre is a square perpendicular rod notched on one side for the reception of a ratchet-spring fixed to the collar of the central wheel, and by which the battery may be easily lowered into the liquid, or raised and kept suspended at any point desired. This arrangement is much preferable to that of a screw, as in Stohrer's instrument, because the small size of my apparatus as compared with the former, enables the assistant in charge to regulate its power according to the demands of the operator, with less delay and equal facility.

The upright rod being screwed into a transverse support in the box, can be removed when the battery is not in use.

The box is divided into two parts by a central plate, suspended above, and running from before backwards; a stopcock is provided for drawing off the fluid and washing out the battery after being used, and the whole being made of hard rubber moulded, there is no necessity for lead or other lining.

The conducting cords ought to consist of not less than 100 strands of fine copper, or, what is still better, silver wire, each cord well covered with silk or cotton in the first place, and then, as a matter of great convenience when operating, bound together, by another covering to commence 12 inches from the binding-screw extremities, and to continue up within 3 inches of the opposite ends. The latter should each be provided with a socket and sliding ring for the reception of the cautery handles, as this is a much better and less bulky manner of making connection than by binding screws as ordinarily employed.*

DIRECTIONS FOR PREPARING THE BATTERY.

The quantity of fluid required is six pints, prepared by dissolving twelve ounces of bichromate of potassa in five pints of boiling-water, to which, *when cool*, one pint of sulphuric acid is to be slowly added. Owing to the chemical heat generated by the admixture of the acid, the liquid must again be allowed to cool before using; otherwise, the zinc plates would suffer much waste, and the efficiency of the whole apparatus then and for the future be seriously impaired. Every battery ought to be carefully examined *each time* before commencing operations with it, so as to make sure that every part is in order, and that no displacement or contact of zincs and carbons has taken place since last in use. Before pouring the fluid into the box, the elements should be lifted out carefully and rested on some smooth surface, and the quantity above stated (six pints) should be measured, unless, as I have suggested to the manufacturers, a mark be placed on the inside to indicate the required quantity. The next step will be to screw on the upright rod, and suspend the battery sufficiently high to be out of the bath. The conducting cords may next be adjusted, and in doing so, care should be taken that the binding screws are turned down tightly, so as to insure perfect connection, the same exactness being also necessary in regard to the handle attachments.

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* This battery, as well as every form of electrode required, is manufactured by Shepard & Dudley, 150 William Street; and for the perfect and satisfactory manner in which my instructions have been carried out, as to their construction, much credit is due to the good taste and mechanical judgment of Mr. William R. Leonard, with the above firm.

FIG 2

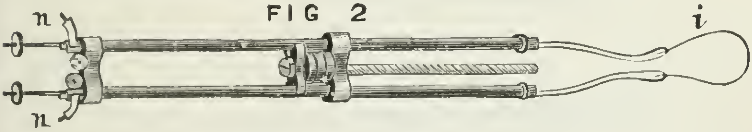

Figure 2 represents an improved loop instrument originally manufactured by Mr. Charles T. Chester at my suggestion, and is far superior to any other that I have seen used or described, for the following among other reasons: The loop is tightened by straight traction instead of being wound on a roller, and thus less likely to be impaired for future service; while the opera-glass attachment enables the surgeon to keep up a more regular and steady action than would be possible by turning a wheel. Moreover, by using such an instrument as this he will be more likely to avoid the frequent and serious mistake of cutting through the tissues too rapidly, thereby forfeiting one of the main advantages justly claimed for galvano-cautery, which, I need hardly say, is security against hemorrhage.*

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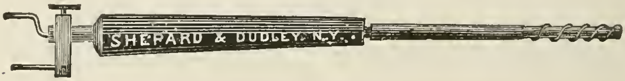
* The loop end of this instrument is somewhat different from that exhibited in the drawing, and is provided with a wooden casing to protect the sound parts from injury by reflected heat in the metallic conductors.

Figure 3 is the spiral cauterizer which I have been in the habit of using successfully in cases of chronic inflammatory affections of the urethral mucous membrane, and as a more thorough, safe, and radical means of combating obstinate follicular disease of the cervical canal than any other caustic or stimulating application heretofore employed or recommended. Within the last few months, however, I have devised and used what I consider a much better means of accomplishing the same purpose, by substituting for the spiral wire and porcelain, 5 inches of a heavier wire (say No. 16), flattened and doubled so as to nearly represent a long cylinder. In this manner the treatment here recommended may be very thoroughly carried out.

FIG 3



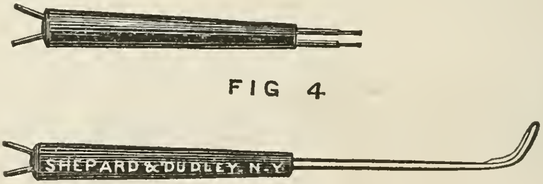


FIG 4

The cautery knife and handle are tolerably well shown in figure 4, and, as the uses to which the former is applicable will be referred to elsewhere, no description need be here given.

So also in regard to the illustrations A B C D E F G; while some will be clinically noticed hereafter, the uses which each is designed to serve can hardly fail to be understood by a moment's reflection.

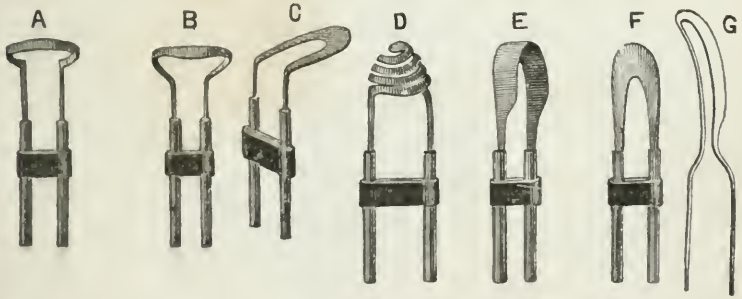
It may be proper to remark, however, that the dome-shaped cauterizer D is used for the purpose of searing over surfaces from which morbid growths may have been extirpated, or stopping the open mouths of bleeding vessels; and the little knife G is that delineated in figure 10, where one of the many useful purposes to which it may be applied is plainly indicated.

In addition to the battery and electrodes herein described, it must not be forgotten that the operator will have to be provided with certain other contrivances designed especially to facilitate cautery operations, though as to their range of usefulness by no means limited to such purposes, as for example,

A SUITABLE SPECULUM.

Ordinary devices of this nature, though answering tolerably well for a mere ocular examination of the cervix uteri, or routine topical treatment, will be of no service whatever for the purpose under consideration, because parts to which the actual cautery is to be applied must not only be brought well into view and within perfect control, but as far as possible isolated from surrounding structures. Besides, patients, whether anæsthetized or not, are often restless, and the slightest movement at a critical moment might seriously affect the whole subsequent proceedings, were not some provision made against all such contingencies.

Moreover, it must not be forgotten that inexperience on the part of an assistant, or the most trifling variation in the position of his hand, often rendered unavoidable by fatigue, may equally interfere with the operator's design.



If a Sims speculum be used, at least two experienced and reliable assistants will be needed, one to hold that instrument, and the other to take charge of the anterior vaginal wall, yet neither can render any other kind of aid while thus engaged. The strongest objection to its use, however, is the position in which a patient must necessarily be placed, for I contend that no uterine operation by galvano-cautery can be satisfactorily conducted unless the patient is made to assume the dorsal attitude.

Granting, then, that these views are in the main correct, and knowing from extensive clinical experience that we do possess a means by which most of the important desiderata here indicated may be obtained, any device combining properties so attractive, demands something more than a mere passing notice.

The instrument referred to is the speculum introduced and described by me about fifteen months ago, and a modification of which is here shown* (Fig. 5).

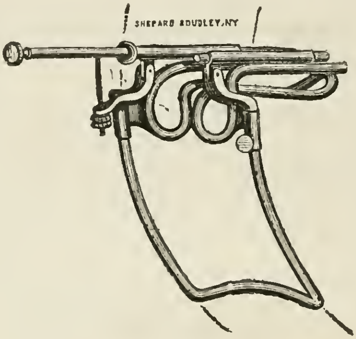


Fig. 5.

This speculum, it will be observed, differs none in principle from that previously noticed, and, as to the several pieces of which it is composed, they may be considered the same, *with one exception*, namely—the frame on which the lower or perineal blade moves is much wider and a little longer, thereby affording more working space and greatly facilitating operative manipulations. The fore-shortened view in the above sketch will serve to explain more clearly the points of difference between this "operating," and the ordinary speculum.

Some advantages, however, will be found by having the intravaginal parts of this instrument a little longer—say half an inch—and from one-quarter to three-eighths wider than the ordinary size. I have also occasionally resorted to a piece of bent spring wire, to be introduced after the speculum has been adjusted and the uterus fixed in position, for the purpose of still further separating the lateral walls. This, though by no means an indispensable requisite *in any case*, may nevertheless be made to render good service, under certain circumstances, and on this account I have given directions to have some such device supplied with each "*operating*" speculum.

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* For a full description of this instrument see *American Journal of Obstetrics and Diseases of Women and Children*, for Aug., 1871.

Fig. 6 is intended to illustrate more clearly the principle on which this speculum is constructed, and the *modus operandi* by which the curved vaginal canal is not merely dilated, but straightened by pressing back the perineum BELOW, while the vesical wall is elevated ABOVE. The under blade, it will be noticed, is made to move in a circle of which the centre is indicated by its point, so that the relation of the latter to the cul-de-sac, when the instrument is first introduced, does not materially change, no matter to what extent the perineal blade may be pressed backward. The various directions, too, in which the upper double rod may be made to move, is a most important feature in this instrument: for, however displaced a uterus may be, more especially if anteverted, and provided no firm adhesions exist, there is no difficulty in bringing it into view, and so fixing it for examination or treatment.

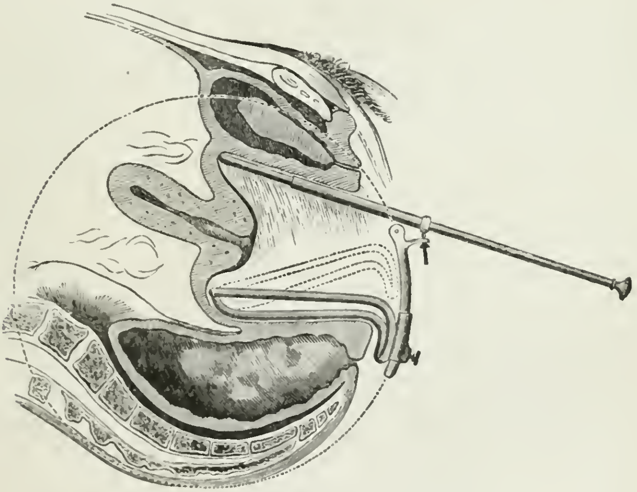

Fig. 6.

The difficulties said to have been met with by some in using this instrument may, I think, be very readily accounted for; and I would submit the following as the most probable and rational explanation: In the first place, it has been found almost impossible, up to a very recent period, to get manufacturers to carry out my instructions as to its mechanism, and the consequence has been that quite a large number of imperfect instruments have found their way into the hands of practitioners. That this has been a source of serious annoyance and much disappointment there can be no doubt, for I have myself seen more than one worthless specimen; and wherever I have had the opportunity, have insisted on the purchaser's returning it. This drawback, I am told by the various makers, is now at an end, and there will be no difficulty for the future in obtaining the perfect instrument. Nevertheless, every purchaser should carefully examine to see that the principle as to circular motion, etc., is carried out, and that *the width of the upper blade is rather less than that of the lower.**

Again, if not unfrequently happens that some physicians undertake to use it without reflecting on the purposes for which it has been devised, or the directions heretofore given for its application, and as a natural consequence often blunder in adjusting it. There are others, too, I am told, who seem to have been disappointed at failing to find in this contrivance an automatic speculum, by the aid of which common sense and ordinary judgment in uterine examinations might safely be dispensed with. One of the latter class, if asked his opinion of it, will very likely reply that he could not possibly get along with it, as in his hands it caused much pain to the patient, and after all offers no advantages that he can see over any one of half-a-dozen others. Akin to this class might also be mentioned another—one, I fear, never doomed to become extinct in any age, and on whom the most labored and intelligible description of improved instruments and apparatus, from whatever source, would be lost or have but little effect, but yet, neither in numbers nor otherwise so entirely insignificant as to be passed by unnoticed. These self-styled conservatives do not as a rule take kindly to novelties, but, quite content to follow the path of writers and thinkers of the last generation, some one of whom they invariably set up to worship and accept as a guide for all time to come, could hardly be expected to become favorably impressed with any such innovation as that herein described.

Indeed, so inflexible are they in adhering to obsolete habits, and so utterly incapable of freeing themselves from the grasp of preconceived notions, that anything seeming to clash with either will not be entertained for a moment.

They neither hesitate, nor, strange as it may appear, are they ashamed to declare that every structural change to which the human uterus is prone can be diagnosticated by them with the greatest facility and satisfaction by peering through a glass tube, and for all such ails their magic wand of lunar caustic is a never-failing remedy. Now, so far as this class is concerned but little can be hoped for from anything that I might here advance; for of what benefit would be the best microscope to one who would insist on his being able to study pathological anatomy by the aid of a Stanhope lens?

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* Say not more than one inch and a quarter, outside measurement.

Thus, then, on the one hand, through the well-known obstinacy of manufacturers and their workmen in persisting to carry out their own notions in spite of repeated protests, and on the other from neglect, incapacity, or other causes, on the part of practitioners, the instrument has yet to be better and more generally known before its great value can be appreciated.

There is no speculum with which I am acquainted that can be used in all cases without more or less discomfort to the patient, and the one under consideration is no exception in that respect. However, though the least objectionable of all others on this ground, and the most indispensable instrument to every gynæcologist (Dr. Sims'), may be employed to draw back the perinæum with but little pain in the majority of cases, it is unreasonable to expect that this proceeding could be carried to an equal extent by one which, though designed for a similar purpose, can accomplish the same only by making counterpressure on the arch of the pubes and base of the bladder. But it is neither proper, nor at all necessary, except in operations of more than ordinary importance, and when patients are under the influence of an anæsthetic, to insist upon such a display of the parts as this instrument is capable of affording; and on this point I have been quite explicit in the following directions for its use:—

"The patient having assumed the desired position—say, on her back, with knees drawn up—and the introductory digital examination having been made, the speculum, with elevating rod drawn out, is taken in the right hand, the thumb resting on the anterior concave surface of the perineal blade, while the left index finger and thumb are used to separate the labia. It is now to be inserted downward and backward in the direction of the post-uterine cul-de-sac, and, while being thus held, the projecting handle of the elevator is to be depressed and pushed forward to the extent required to bring the uterus into a proper position in relation to the outlet, when the touch of a finger to the button-screw serves to keep everything in place.

"It will now be observed that the elevator and depressor blades describe a triangle, and the vaginal canal represents a hollow cone, whose apex is the outlet.

"The perineal blade is now to be depressed in proportion to the amount of working space required, and, of course, with due consideration for the degree of elasticity or resistance in each case, when a turn of the set-screw will serve to secure it at any desired point.

"When the object is merely to make simple applications to the cervix, a very slight depression of the blade only is needed—rarely more than half an inch. Besides, forcible and continued traction cannot be easily tolerated, and ought to be reserved exclusively for the more important operations. In the case of patients under the influence of an anæsthetic, or where the parts have been subjected to parturient expansion, no particular exactness in this respect is called for. In others, however, the utmost care should be observed, less profitless curiosity be appeased at the expense of a patient's comfort.

"Having thus obtained a full display of the uterus and adjacent parts, the projecting lever-rod may be removed, and the patient placed in any other than the back position, previous to or at any subsequent stage of an operation, should such a procedure be indicated.

"Indeed, I have quite frequently found it desirable to change the position of patients during tedious operations without removing this speculum, and in no instance have I noticed any deviation in its relation to the intra-vaginal parts from that obtained when first adjusted.

"In proceeding to remove the instrument, the steps adopted for its introduction should be reversed, the perineal blade being first released and the elevator drawn outward, so that in closing, it may clear the cervix.

"The latter purpose—closing the blades—will be best accomplished by first making slight pressure on the projecting lever-rod, as in the act of elevating the anterior wall, when the button will admit of being rolled down with a touch of the finger, and the speculum can then be withdrawn."

I trust, in thus attempting to explain the manner of using and the advantages possessed by my own speculum, I shall not be understood as ignoring the merits of other such instruments, especially those of Drs. Thomas and Nott, with which I have had considerable experience, and satisfactory too; and as for that of Dr. Sims, it is hardly supposable that any gynæcologist of the present day could pretend to do without it.

The distinctive features of the instrument above described, in addition to its being self-retaining, consists in its wider range of usefulness, and, unlike all other contrivances of the kind, in being capable of affording a complete display of the uterus, with ample room for all instrumental manipulation. There are, therefore, but few, if any, intra-vaginal operations in the whole range of uterine surgery, vesico-vaginal fistulæ perhaps alone excepted, but what may be conducted with the greater facility and completeness by its aid, and *without a speculum-assistant.*

However foreign to the subject of this paper the foregoing remarks may be deemed by some, I have very little doubt but that there are many who will hereafter, at least, candidly admit both their relevancy and importance.

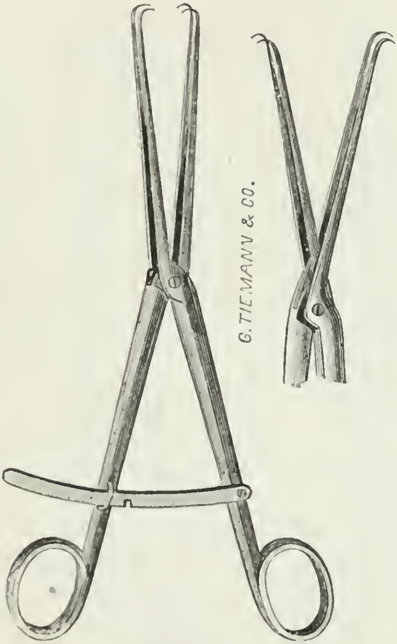

Fig. 7.

Fig. 7 is a reversible vulsellum devised for the purpose of drawing down the uterus and maintaining it in any desired position during operations; as, for example, amputation of the cervix and extirpation of cancroid growths. To accomplish this object it is to be introduced while closed within the cervical canal, and the tenaculum points reversed by a further approximation of its fenestrated ends when it may be fastened at any degree of expansion by the ratchet attachment (see Fig. 10). I have had many opportunities of demonstrating the utility of this little instrument, and as it will also serve for a good ordinary vulsellum, I consider it an invaluable aid in most utero-vaginal operations. It is but proper to state, however, that the principle of its mechanism is no invention of mine, but originally suggested by examining a hinged tenaculum designed and used many years ago by my friend Dr. J. Marion Sims, though for entirely different purposes. The only original features about it, therefore, besides its adaption to other uses, are in its having double instead of single projecting claws and reverse action.

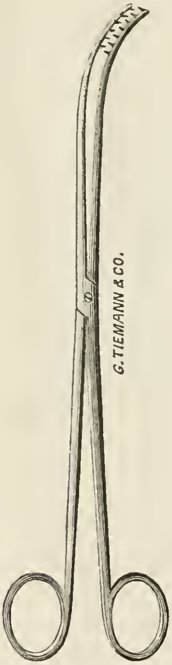

Fig. 8.

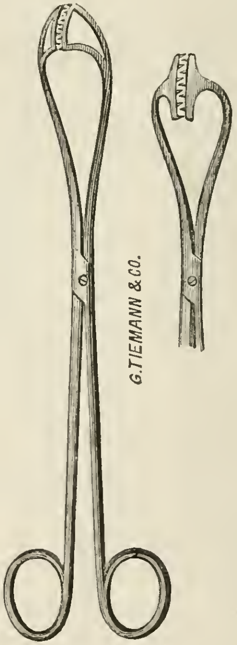

Fig. 9.

Figs. 8 and 9 represent rake-toothed forceps employed for grasping such structures as are apt to break down readily, or yield to traction by any ordinary tenaculum or vulsellum. I have also found them especially serviceable in tearing away large masses of diffuse vegetating and other soft cancerous growths preparatory to canterization of the subjacent tissues.

Having thus, as briefly as possible, described such an apparatus and the more important of the instruments which I have found needed in operations by galvano-cautery, I shall now submit a few cases from my clinical records, selected solely on account of the intrinsic interest of each, and the instruction that may accrue from their perusal. The manner in which these cases are presented, and the accompanying illustrations, will, it is believed, render unnecessary any extended introductory remarks, or specific directions as to how such operations ought to be conducted.

(To be continued.)

REVIEWS AND NOTICES OF BOOKS.

OVARIAN TUMORS; THEIR PATHOLOGY, DIAGNOSIS, AND TREATMENT, ESPECIALLY BY OVARIOTOMY. By E. RANDOLPH PEASLEE, M.D., LL.D., Professor of Gynæcology in the Medical Department of Dartmouth College, etc., etc., etc. 8vo, pp. 550. New York: D. Appleton & Co. 1872.

THE history of Oophorectomy, as the author rightly terms it, is pregnant with an unwelcome lesson; a most recent and complete demonstration here being presented of the fallibility of ruling minds.

So recently as 1856, during discussions upon Oophorectomy in the French Academy of Medicine, men of the eminence of Velpeau, Cruveilhier, Cloquet, Malgaigne, and Trousseau, opposed the operation in most unmeasured terms; Moreau stigmatizing it by saying, "I think the operation should be placed among the prerogatives of the executioner." . . . . In 1871, Sir James Simpson said, concerning this same operation, "Amputation of the thigh and even of the arm has a higher mortality; so has ligation of the subclavian for aneurism and the operation for hernia. Lithotomy after middle life is as fatal, and amputation of the leg in hospital is scarcely more safe." . . . And Mr. T. S. Lee speaks of it as "an operation without its parallel." Although, from the magnitude of the operation, surgeons have pretty generally reported the cases in which they have performed it, the operation is yet so recent that, prior to this publication, but two monographs had been attempted upon the subject. When we remember that in the United States the first Oophorectomy was not performed until 1809, in Germany in 1817, in England in 1826, and in France in 1844, that its performance even then was discouraged in the English *Medical and Chirurgical Review* for 1825 as follows, "In despite of all that has been written respecting this cruel operation we entirely disbelieve that it has ever been performed with success—nor do we think it ever will"—it is not surprising that experience accumulated slowly, and that our only previous monographs, that by Kœberte in 1866 and that by Bryant in 1867, are both of them small and incomplete.

Now that this once "cruel and barbarous operation" has come to be so familiar; now that operators are reporting a ratio of seventy and even ninety per cent. of successes, great demand has arisen for fuller information upon the subject.

Thanks to Dr. Peaslee, in the book before us we find this demand met just at the right time; but this is not all, it is met also in just the right manner; the too common error of specialist authors of sacrificing quality to time we are glad to observe is conspicuously absent. The entire book is in its structure comprehensive, in its method logical, and in its style perspicuous.

The book is divided into two parts of nine chapters each, and is illustrated by fifty-six engravings, most of which are exceedingly good.

Part first is devoted to the normal and pathological anatomy of the ovaries, to diagnosis and palliative treatment; part second is confined to the subject of oophorectomy, its history, details, and the after-treatment.

Very properly the first chapter covers everything concerning the anatomy of the ovaries in their natural state; the subjects of growth-classification, pathology, causes, symptoms, complications, diagnosis, differential diagnosis, and the prognosis of ovarian tumors following after. In the chapters on these subjects, the most faithful thoroughness has been displayed, the grouping of the microscopical and pathological anatomy being at the same time exceedingly natural and convenient.

The ninth chapter, containing as it does a full consideration of all the methods of treatment which at various times have been proposed as substitutes for the much dreaded operation of ovariatomy, is of particular interest. These are freely discussed in the order, first of medical, second of surgical treatment. Under the head of medical treatment, the use of iodine application to the abdomen is rather quickly dismissed, the author concluding it to be of "no avail." The use of the potash salts is discussed very fully and favorably, the chlorate seeming to be by the author most esteemed. The advantage of these the author attributes chiefly to their diuretic effect, and in conjunction with bitter tonics and warmth to the surface commends their use, believing only, however, that they may help "sustain the patient's health for a time, and thus somewhat postpone the fatal result." He says: "Medical treatment of ovarian cysts has been alleged to have effected a cure in but twelve or fifteen instances in all, and all these cases are doubtful. There is, therefore, no rational ground for expecting a cure from this method of treatment in any particular case,"—and in another place, "there is no known remedy which can be at all relied upon for the cure of ovarian cysts."

The surgical methods of treatment other than ovariotomy discussed, are: 1st. Simple tapping. This the author considers at best to be simply palliative, to be always attended with risk, and that in the case of polycysts it should not be practised at all except as an aid to diagnosis; and we may add that, in our own opinion, even then 'twere better it should be done exclusively under such conditions that should the revelation by the tapping call for ovariotomy the operation may be completed on the spot. 2d. Tapping followed by injection of iodine. The result the author would seem to expect from this appears at first quite surprising; ninety per cent. of cures he anticipates, but the tumor must be monocystic; uncomplicated, its fluid must be clear serous, citrine, sanguineous, or purulent; and as for the operation, that must be performed properly and in the first stage. Let that combination of conditions be but fully assured in each case, and possibly we ourselves might be equally sanguine of the results. 3d. Iodine injections with retained canula. This procedure the author thinks should give way to the operation originated by Dr. Noeggerath, which he believes to be applicable in monocysts and polycysts.

Concerning the proposed surgical substitutes for ovariotomy, the author claims to have established that "tapping of ovarian cysts at best simply postpones for a time the necessity of removing them; but in case of polycysts it proves to be as dangerous as ovariotomy; and besides, it affords but a slight, if any, temporary relief. It does not, therefore, in either form of cysts prevent the final necessity of ovariotomy;" and that "iodine injections are applicable only to cases of monocysts or oligocysts containing a serous, purulent, or sanguineous fluid, and uncomplicated by adhesions or otherwise. It is, however, generally impossible to predict the absence of complications with any certainty after the cyst has attained the middle of the second stage; and on the other hand, complications are to be expected by, or soon after, this time. Therefore these injections should be restricted to the first and second stages of monocysts—a period before ovariotomy is to be thought of.

"The treatment of ovarian cysts by tapping," and leaving the canula *in situ* as improved by Dr. Noeggerath, finds its true application only in cases of ovariotomy left unfinished by reason of adhesions; and some cases of cysts in which ovariotomy, for very sufficient reasons, should not be attempted at all.

Except as improved by Dr. Noeggerath, this procedure is more dangerous, however, than ovariotomy."

In the second part of the book, which is devoted exclusively to all the points directly and indirectly concerning oophorectomy, we find the first chapter gives the history of the operation in all countries, and shows a great amount of industry. Without any apparent partisan spirit, the author has taken pains to establish this operation fully and forever as an American operation, for which faithful service he has placed the profession of this country under a lasting obligation. He has not permitted this history to be merely a catalogue of operations, but, in connection with the gradually improved statistics, has shown in a most interesting way the curious manner in which the views of the leading minds of the profession changed during their twenty years' somersault so recently completed.

Notwithstanding all that we have said in favor of this book, we might mention one or two persons who could have written much of it just as well as our author has done it; but beginning with the third, and proceeding with the following chapters of the second part through to the end, we find at every step, in addition to good authorship, marks of sound, honest, thoughtful experience peculiar to himself.

Under the "considerations in favor of ovariotomy," our author expresses the conclusions that "with certain exceptions previously mentioned, ovariotomy is the only curative procedure to be recommended for all ovarian cysts which have passed beyond the commencement of the third stage, and for polycysts at any stage, if found to be undermining the general health;" that "ovariotomy, in well-selected cases, is not comparatively a dangerous operation, *ninety per cent. recovering*, probably, in the hands of experienced operators." That "ovariotomy, when successful, restores the patient, as a rule, to full and perfect health;" that "ovariotomy excels all other strictly surgical procedures in its life-prolonging results to woman."

On all that pertains to oophorectomy, Prof. Peaslee not only gives statistics and states bare facts, but writes with the inspiration and authority of experience: while showing the greatest respect for the opinion of others, and carefully comparing them with each other, he in no case hesitates to express definitely his own views, and especially upon such important improvements as at different times have been introduced by himself. Of these we would make special mention of his method of disposing of the ligatures used in the treatment of the pedicle, and of his use of intra-peritoneal injection for septicæmia. Whatever method he pursued, whether the actual cautery, écraseur, or ligature, either one or all he used, the pedicle for a certain period is a never-failing source of apprehension, especially about the time for the release of the ligature.

Prof. Peaslee's method of applying the ligature possesses not only the advantage he claims of simplifying the removal of the ligature, but of diminishing the liability to secondary hemorrhage, and to septicæmia also. The apparatus employed consists of a perforated canula and a trocar knife. The ligature, which is made to include both the pedicle and the trocar, passes transversely through it, the free end being made fast to the lips of the canula, which project from the abdominal wound. When it is desired to release the ligature, the trocar knife is passed down the canula, when the ligature, as it crosses the interior, is divided, and the canula and ligature may be withdrawn together. Although this procedure has yielded a perfect success in a case before us, in view of the stimulus, the contact of air leads to septicæmia. We would suggest it might be expedient that the mouth of the canula or air-shaft be hermetically sealed from the moment of its introduction to that of its removal.

The use of intra-peritoneal injections, as originated by Dr. Peaslee in 1855, is presented chiefly by illustrative cases. Their use our author believes to be indicated *curatively* where septicæmia is already developed, and *preventively* whenever there exists in the peritoneal cavity fluids, the decomposition of which may be justly apprehended. The injection preferred is a solution, at about 96°, of common salt one drachm, and carbolic acid three grains to a pint of water. With this the peritoneal cavity is washed out daily, until decomposed fluids and fetor have ceased to appear; forty-eight hours after which, the superficial wound is permanently closed.

The cleansing process is effected by means of a very simple and ingenious contrivance described and illustrated on page 515. The author believes that by this measure the average success of ovariotomy may be increased four or five per cent. We confess our incompetence to venture a verdict upon either of the above-mentioned additions which Dr. Peaslee has made to the resources in ovariotomy, having tried neither of them. Dr. Peaslee, however, has tried both, and both have succeeded. To enter into a protracted discussion on these points would be out of place in such an incomplete review; we would rather the book itself should be carefully read by all, who have an interest in the subject. This, however, we can say without hesitation, that we fail to discover in either of these procedures anything which is not based upon sound principle and common sense; and as the author's views are fortified by the facts which accompany them, and have been still further re-enforced by the experience of others, they cannot fail to command such further attention as they deserve.

After a careful perusal of this book, we feel unable to suggest anything which might either be added or taken away without disadvantage. The book fully sustains the previous reputation of its accomplished author, and is equally creditable to his learning, experience, and judgment. We deem its careful perusal indispensable to all who would treat ovarian tumors with a good conscience. B. H.

A MANUAL OF MIDWIFERY: Including the Signs and Symptoms of Pregnancy, Obstetric Operations, Diseases of the Puerperal State, etc. By ALFRED MEADOWS, M.D., London, Member of the Royal College of Physicians, etc. First American from the Second London Edition. Revised and enlarged, with illustrations. Philadelphia: Lindsay & Blakiston. 1871. pp. 487.

THE DUBLIN PRACTICE OF MIDWIFERY. By HENRY MAUNSELL, M.D., formerly Professor of Midwifery in the Royal College of Surgeons, Ireland, etc. New Edition, enlarged and revised, Edited by THOMAS MORE MADDEN, M.R.I.A., Senior Assistant Physician, Rotunda Lying-in Hospital, Dublin, etc. London: Longmans, Green & Co. 1871. pp. 315.

DR. MEADOWS, in the compact and elegantly printed little work before us, has given, as the results of his labor, a book which he justly styles a student's manual, and one of equal importance to the practitioner. A practical treatise it may truly be considered, but we confess to great disappointment, on perusing its chapters, to find several that fall far below the completeness essential to a work of such pretensions. We refer especially to those on the all-important obstetric operations as instanced in the chapters on the "Forceps" and "Indication of Premature Labor," to which latter subject but seven pages are devoted, a striking contrast to those on "Turning," and "Cæsarean Section," and "Craniotomy," which are excellent in detail and illustration. Considerable thoroughness is also evinced in the chapters on "Unnatural Labor," though in these we find some fault with the prominence given to pelvic measurement by the use of pelvimeters, instruments which, in this country at least, are not held in much estimation by obstetricians of prominence. After all, however, these are but small faults in a work which does not aim at being a complete text book, and it is not often that we find so few faults in the "Manual" division of medical literature, which, as a rule, do but little good, if not in many instances considerable harm, to the advancement of the special departments of medicine to which they are devoted. It is, therefore, with great gatification that we are enabled to class Dr. Meadows' "Manual" as a rare exception to the above rule, and to pronounce it with pleasure an accurate, practical, and creditable work, and, therefore, to unhesitatingly recommend it as decidedly the best obstetrical manual to be placed in the hands of both students and practitioners.

Of the "Dublin Practice of Midwifery" we are unable to say as much. The time once was when the Dublin school took the lead of all others, but such is no longer the case; and the pages of the above little work in numerous instances show that the Dublin practice has been left considerably behind that of London and America. What indeed can be said of a work which dismisses the subject of "Funis Presentation" in less than two 12mo pages, and in which the only treatment recommended is to "endeavor to pass up the cord above the presentation, and keep it there during the pain, until the latter fills the pelvis and prevents it again prolapsing. Some have recommended to hook it upon a limb of the child if possible; others to enclose it in a bag, or pass a sponge after it, to keep it up. Any of these measures that are likely to do no harm to the mother should be tried. Some gentlemen have spoken of delivering by turning, or the forceps, but, I should hope, not seriously their suggestions to be adopted." Nothing is said of the recognized "postural treatment" of Prof. Thomas, leading us to infer that in Dublin it has not yet been heard of! Throughout the other chapters we find similar evidence of inefficiency, and, indeed, we are forced, on the conclusion of the perusal, to condemn it as a work imperfect and behind the age, and consequently neither fit for practitioner nor student.

A PRACTICAL TREATISE ON THE DISEASES OF WOMEN. By T. GAILLARD THOMAS, M.D., Professor of Obstetrics and Diseases of Women and Children in the College of Physicians and Surgeons. Third edition. Philadelphia: Henry C. Lea. 1872. pp. 784.

SINCE the new era introduced into gynæcological practice by Sims, Emmet, Thomas, and other prominent surgeons of this country, whose ideas have been followed and enlarged upon in the old world, and since the appearance of Sims' "Uterine Surgery," no book has been published which, like the one in question, combines all the new inventions and appliances in gynæcology with a scientific and practical account of the various disorders. The favor which the work has found is plainly shown by the fact that this is the third edition within the short space of four years. Coming from the pen of a well-known American gynæcologist, whose large practice entitles him to write from personal experience on most of the subjects under discussion, it has filled a vacancy in the field of gynæcological literature which was felt even more keenly in Europe than in this country.

After giving a historical sketch of uterine pathology from the earliest period of our knowledge—which is divided into three eras, by three men, Récamier, who improved our power of diagnosis in exposing the cervix uteri; Simpson, who opened the investigation of the body of the uterus; and Sims, who rendered both investigations more simple, complete, and satisfactory; and touching lightly on the efforts now being made to place gynæcology and obstetrics as much as possible under the management of female practitioners, on which subject a very just position is assumed, and the allowing them a fair opportunity in the field of medicine approved of, although the history of the past has shown their failure "to advance or even maintain the integrity of the art intrusted to their hands"—the author proceeds to discuss the etiology of uterine diseases. Those influences which, growing out of civilization and refinement, tend most decidedly to produce uterine disorders, may be thus enumerated:—Want of fresh air and exercise; excessive development of the nervous system; improprieties of dress; imprudence during menstruation; imprudence after parturition; prevention of conception, and induction of abortion; marriage with existing uterine disease. "The indolent habits of a great portion of American ladies; the prevailing style of dress; their imprudence in regard to their sexual functions, which causes the act of sexual intercourse, which in one whose organs maintain a normal position, is a physiological process devoid of pathological results, to become an absolute and positive source of disease;" and the frequency of intentional abortion, which appears to be tacitly allowed by law, are severely and justly criticised.

The chapter on Physical Diagnosis contains much which is useful to a beginner, such as hints on the introduction of specula, tents, etc. Of the specula recommended, Sims', Cusco's and Ferguson's are the most prominent. Thomas' "telescopic speculum," which can be shortened and lengthened at will, appears to be a practical instrument. The uterine probe used by Sims is advised for first examinations, in preference to the unyielding instrument of Kiwisch or Simpson. The various modes of physical diagnosis are given, as follows: anæsthesia, vaginal touch, conjoined manipulation, abdominal palpation, rectal touch, vesico-rectal exploration, speculum, uterine probe, tents, endoscope, exploring needle, microscope, auscultation and percussion. The diseases of the external organs of generation are very fully and practically treated; the articles on rupture of the bulbs of the vestibule (pudendal hemorrhage and hematocele) and on coccyodynia, are not usually found discussed to such a length. In the chapter on rupture of the perinæum, we miss the mention of the operation practised by Prof. Simon, which was first published in 1868, and an account of the successful cases which has lately been given by Simon's assistant, Dr. Hirschberg.* For vaginismus, Sims and Burns' operations, and the non-operative treatment of Scanzoni and Tilt, are given at length. The author appears to think both procedures applicable to individual cases. As far as we are aware, the generality of German pathologists and gynæcologists now concede granular vaginitis to be due (simply) to a hypertrophical or swelled condition of the papillæ of the vagina; a few pretend to have discovered muciparous follicles in the vagina, and attribute the disease to inflammation of these follicles; but these latter stand very much isolated, and their opinion seems hardly to warrant Dr. Thomas giving it the preference. The chapter on "Fistulæ of the Female Genital Organs" contains a very good historical account of the operation, and describes the method of Sims, Bozeman, Simon, and others very clearly and satisfactorily. The numerous excellent diagrams in which, moreover, the book abounds, of course greatly facilitate the comprehension of the various manipulations. In speaking of the treatment by sutures of recto-vaginal fistulæ, no mention is made of the method lately used by Simon to dilate the sphincter ani as much as possible with duck-bill specula, and operate the fistulæ through the rectum, a procedure which was found to succeed in cases where the attempt had been made in vain by the vagina.

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* A translation of Dr. Hirschberg's paper, by Dr. Paul Munde, of this city, will appear in a future number of the *Journal.*

For his treatment of the chapters on "Uterine Pathology and Therapeutics, and the Inflammatory Disorders of the Womb," the particular thanks of the profession are due to the author, for by simplifying and cutting down the host of conflicting and undefined terms and expressions with which the disease hitherto known as "chronic parenchymatous metritis" was encumbered and rendered unintelligible, he has done science a real service. The terms "areolar hyperplasia," or "diffused interstitial hypertrophy," adopted by Professor Thomas, express clearly and concisely the changes in the uterine tissue and the nature of the disease, viz., an increase in number and size of the fibres of the connective tissue of the uterus, a condition also expressed more at length by Klob, as "diffuse proliferation of connective tissue due to hyperæmia." "It is a disorder of nutrition, which very frequently affects the uterus, and is characterized by congestion, hypergenesis of the connective tissue of the organ, and hyperæsthesia of its nerves. It may affect either the entire uterus, or the neck, or the body and fundus; that form affecting the cervix is the most common. The old idea that the chronic enlargement of the uterus was due to inflammation and the deposit of lymph, has been obliged to give way to the evidence obtained by the microscope, and more careful observation, which shows that the disease originates in a chronic congestion of the uterus, by means of which gradually the connective tissue becomes hypertrophied and increased in quantity. The causes of this congestion are so various, numerous, and often difficult to determine, that even a short survey of them would take up more space than we could afford. In opposition to Klob, who does not admit any great increase in the muscular fibres, Dr. Finn, of St. Petersburg, reports the result of his observations, which show that the number of muscular fibres is always increased, their length and breadth is extended, and in the latter stages the amount of connective tissue is always relatively diminished, although absolutely enlarged, and that the increase of bulk of the uterus is mainly caused by hyperplasia of the muscular fibres. Opinions are still at variance, as we thus see, and further investigations will have to determine the truth. The author does not incline to the idea that areolar hyperplasia has any direct connection with carcinoma, as cause and effect. The prognosis is unfavorable as regards a cure, favorable as regards danger to life. The treatment of this affection is very manifold: rest, both local and general; change of air, habits, associations; hydropathic treatment, local depletion (less employed by Dr. Thomas from year to year), vaginal injections, suppositories, cauterization, alteratives, tonics, etc. The principle upon which Braun, in Vienna, acts when he attempts to cure prolapsus uteri, by cutting off the portio-vaginalis, in order to produce a retrograde metamorphosis of the bulk of the womb, is also acknowledged by Thomas, and the operation recommended for some unmanageable cases of areolar hyperplasia.

In the treatment of acute endometritis and metritis the author advises the mild emollient treatment, with rest, warm injections and poultices, in preference to the more energetic antiphlogistics. For chronic cervical endometritis the general treatment is placed almost superior to the local; of the latter, medicated tents of sponges, and the removal of enlarged Nabothian follicles by Sims's curette are recommended, among many other applications. These medicated sponge-tents, made very long and slim, are likewise strongly advised in chronic corporeal endometritis, the pressure of the expanding sponge proving actually beneficial. After a detailed discussion of the *pros* and *cons* of intra-uterine injections, Prof. Thomas comes to the conclusion, that although comparatively safe in the hands of skilled specialists, they will always remain a hazardous method for the general practitioner lacking such skill, etc. Intra-uterine scarification and the curette are also mentioned in the treatment of corporeal endometritis. As regards the significance of versions and flexions, Thomas adopts the view, that occasionally displacements of the uterus, if not attended by any other disease of the organ or its surroundings, are neither painful nor dangerous, but they are always important, and require treatment on account of the impediments to conception and regular menstruation; if complicated with other disorders, they become a source of great pain and discomfort second to no one class of uterine diseases. In the chapter on "Descent of the Uterus" we find nothing new, with the exception of the description of the author's method of narrowing the vagina, which consists, in substance, in tearing loose the anterior vaginal wall from the bladder, uniting it in a longitudinal fold by sutures, and cutting off the loose flap of vaginal wall over a clamp. In three out of five cases the uterus remained *in situ*. For a more detailed account of the operation, we must refer to the author's description. We miss, again, any mention of Simon's colporrhapphia posterior, which has been resorted to by him with great success in some twelve cases or more.

In ante- and retro-version the mechanical treatment is principally employed; pessaries recommended are Graily Hewitt's, the author's, Cutter's modified, for anteversion, Albert Smith's, Thomas', Cutter's modified, Hewitt's, and Meig's ring pessary for retroversion. In cases which cannot endure a pessary, the medicated tampon should be employed until the instrument can be borne. In flexions, Hurd's hard rubber pessary, with a canal running through its centre to receive the cervix uteri, will be found of service in many cases. Stem-pessaries require the greatest caution.

In the chapter on "Inversion of the Uterus," the author relates at length his celebrated case of reduction of an old inversion, by means of abdominal section, and dilatation of the cervical ring from above, and also a second and similar case, which, however, terminated fatally.

In order to avoid the confusion which results from the classing of all inflammation of the areolar tissue in the pelvis under the head of "pelvic cellulitis," the author has confined himself to that which chiefly concerns the gynæcologist, viz., the inflammation of the cellular tissue immediately about the uterus, and gives it the term of "peri-uterine cellulitis." Pelvic cellulitis and pelvic peritonitis are not considered synonymous, and are therefore treated separately, there being as much difference between them as there is between pleuritis and pneumiona or endo- and peri-carditis. Pelvic peritonitis is very common, and often overlooked or mistaken for cellulitis. In enumerating the causes of pelvic peritonitis, Prof. Thomas speaks, under "imprudence during menstruation," of the rupture of the peritonæum during evolution. He was apparently not aware (although at page 625, discussing the Anatomy of the Ovaries, he quotes from Schrone, Henle, and Lappeg, and says, "the surface of the ovary is not covered by peritonæum") of the late discoveries of Waldeyer in Breslau (Eierstock und Ei., 1870), who has ascertained beyond a doubt that the surface of the ovary is not covered with a peritoneal coat, but possesses distinct cylindrical epithelium, the boundary-line between which and the tessellated peritoneal epithelium can be distinguished by the naked eye, and is easily seen under the microscope.

Pelvic abscesses should not be opened too early, and never unless the pus can be certainly, easily, and safely reached. In the chapter of "Pelvic hæmatocele" we find almost all the credit of the description of this effusion awarded to France, although the able essays of Schroeder, Freund, Heyar, Crede, and others would have entitled Germany to an honorable mention. Surgical interference, *i. e.*, the puncture of the tumor, is allowable only when great and prolonged pain threaten to exhaust the patient, if the tumor is still fluid, if rupture of a subperitoneal tumor into the peritonæum be threatened, and if the case be an unquestionable instance of the subperitoneal form. Myofibromata are produced by a localized hypertrophy of the parenchyma of the uterus. "Nothing is known respectin the cause of this disease." "The future of gastrotomy connected with uterine neoplasms is still too uncertain to give any decided opinion upon it; it would, however, be wrong to refuse to attempt the only plan by which life may at times be saved," etc. A chapter of five pages is devoted to cysto-fibromata or fibro-cystic tumors of the uterus, which, as a rule, are only found mentioned at length in pathological anatomics, and not at all or very slightly in works on gynæcology.

The young practitioner is warned, in the chapter on "Uterine Polypi," not to undertake the hazardous excision of a corporeal polypus without first having well weighed the chances of success and the dangers of the operation, which latter are not to be undervalued. Whenever it is practicable, all manipulation should be delayed until the expulsion of the tumor into the vagina has been obtained; unfortunately an operation is often called for before this can be effected, and then the operator has no choice. "Cancer, cancroid, or epithelioma, are really malignant in character, and differ as to malignancy only in degree; one form tends to pass rapidly into another of graver type, and in all, if allowed to proceed uninterfered with, systemic intoxication is only a question of time." "Malignant disease may affect the uterus in two forms—cancer and cancroid growth." "Whatever be the peculiar state which gives rise to cancerous deposit, it is certain that any form of the affection may arise from one and the same disorder." According to Dr. Noeggerath, chronic metritis ("areolar hyperplasia") was in six cases traced step by step to its transformation into epithelioma. Two cases are reported by Prof. Barker, and one by Dr. Mettauer, of Virginia, in which, after the application of the acid nitrate of mercury to the ulcerated cervix, the greater part of the uterus sloughed away, and the patients recovered. The importance of a clear distinction between epithelioma and true carcinoma is insisted upon before reports of cures of "cancer" can be accepted as reliable.

For the treatment of carcinoma uteri, when absolute removal is no longer possible, "the careful use of caustics, which produce only a superficial slough," and the "free unrestricted use of opium," besides general tonics, are recommended. As regards the stronger caustics, and to destroy completely the diseased mass in hope of a cure, the author mentions never having seen any improvement from their use, and having often been forced to deplore their employment.

"There is a great difference between the prognosis of these two diseases, if both be recognized early. Even under these favorable circumstances, cancer, when removed, usually returns, while epithelioma is sometimes entirely cured by operation." Although, clinically and pathologically, there is a difference between the two great varieties of cancer, yet the belief must be guarded against that cancroid long remains a local disease; it commonly becomes rapidly constitutional, or the parenchyma is simultaneously affected by medullary cancer, or while cancroid develops in one part, cancer does so in another, or occasionally medullary cancer develops itself after the removal of an epithelial growth. According to Professor Thomas, that form of epithelial cancer known as vegetating epithelioma, or malignant papilloma, is by no means rare.

In subinvolution of the uterus, the dilatation of the cervix with tent, the removal of fungous degeneration of the villi or small mucous polypi with the curette, and the painting of the internal surface of the uterus with tincture of iodine, are recommended, with other general remedies. The chapter on "Dysmenorrhœa," is very interesting, and gives a much more clear and instructive account of the various forms of the affection than is usually found. "Each case should be viewed as a symptom of an abnormal condition, which should as far as possible be discovered and removed." Dysmenorrhœa is no disease, and is not amenable to a uniform plan of treatment. In obstructive dysmenorrhœa, dilatation by instrument is considered less safe and efficacious than tents or cutting instruments.

In the treatment of meno- and metrorrhagia attention is called to the not uncommon dependence of the disease on fungous degeneration or vegetations of the uterine mucous membrane, which should be removed by a curette of copper wire with blunt edges, and the cavity occasionally painted with tincture of iodine, the solution of persulphate of iron or nitrate of silver.

For amenorrhœa, among other remedies, the author employs a stem composed of alternate beads of copper and zinc, held together by a copper wire which passes through the centre of each, and is secured to the uppermost and to the vaginal disk below. This may by any movement of the uterus be bent at the required angle, and consequently can do no injury. The reviewer had a similar instrument recommended to him by Prof. Greenhalgh, of London, who claims its invention, which consists of six beads of copper and zinc, immovably fixed on movable copper beads, with a canal running through the whole, into which the conductor is passed by means of which the stem is introduced.

The chapter on "Sterility" is very short, for the reason "that this affection is only a symptom which should be reached through the malady which induces it." The author follows the lead of Dr. Sims, in his discussion of the subject, and mentions it as that part of the field of gynæcology which has yielded him the least satisfaction and the greatest disappointment.

Among the tumors of the ovary we find a new denomination, "Histoid" (from *ιστος*, "organic texture," and *ειδος*, "like"), for dermoid, pileous, and adipose growths. Of the last 161 pages of the book, 140 are devoted to the diseases of the ovaries and Fallopian tubes, as clear and comprehensive an account being thus given of these affections as could be expected in a general text-book of Gynæcology. As crucial tests of abdominal tumors the following are mentioned: The exploring needle (Thomas recommends the ordinary hypodermic syringe as simple and perfectly efficacious), tapping puncture, and explorative incision. The list of means which surgery gives us for the cure of ovarian tumors is as follows:—Tapping, drainage, incision, injection of the sac, partial excision, ovariotomy. Of these methods, next to the entire removal of the tumor by ovariotomy the process of drainage seems most promising, especially in small cysts, and cases too desperate to allow of the removal of the tumor. Of the modes practised by Noeggerath, Schmetter, West, Scanzoni, and others, that of Noeggerath appears the most practical.

In speaking of incision into the tumor as a curative measure, a table is given of 32 cases of which 20 were cured. (Prof. Simon, of Heidelberg, advises a procedure which appears worthy of notice. He introduces five or six slender trocars into the abdominal tumor on either side of the linear alba, at intervals of an inch longitudinally, about two inches laterally, withdraws the stylets, closes the canulæ with wax, and leaves them in the tumor four or five days, until adhesive inflammation between the tumor and the peritonæum has set in firm enough to allow of an incision directly into the tumor, which is made longitudinally between the canulæ, and the case then treated by abdominal drainage and frequent washing out of the cavity. As regards the unfavorable opinion of ovariotomy, formerly held by Scanzoni, and still quoted by Prof. Thomas, I would mention that in the last edition of his "Gynæcology," published in 1867, vol. ii., page 188, he entirely revokes his former judgment, expresses himself convinced by the admirable results obtained by American and English operators during the last five or six years, and declares himself an ardent admirer of the operation; 13 pages of his book are devoted to the discussion of ovariotomy. [As Scanzoni's assistant, I was present at three ovariotomies performed by him since 1867, of which the first was successful. —*Reviewer.*]

The value of vaginal ovariotomy in case of small cysts not larger than a child's head and lying in Douglas's fossa, is pointed out, and the feasibility and usefulness of the operation are demonstrated by the report of a successful case.

As regards the treatment of the pedicle, Prof. Thomas says: "I do not regard ligature and return as being as safe as external treatment of the pedicle; but do not facts prove conclusively that the prejudice against the method in the minds of many operators is unjustifiably great?"

The application of ice to the abdomen during the first few days after the operation is not sanctioned by American and English operators, although largely employed in France and Germany.

Dr. Peaslee's plan of washing out the peritoneal cavity with disinfectants as long as fetid fluid exists there, in cases where there is danger of septicæmia, is strongly recommended.

In opposition to numerous gynæcologists, Prof. Thomas affirms having passed the sound two inches up the Fallopian tubes, even at will, and not only by chance. Some authorities do not believe in sounding the tubes, and attributed the entrance of the sound up five or ten inches, and its being palpable through the abdominal wall, to a perforation of the fundus uteri; a circumstance which has been known to occur with ease, and without subsequent bad results to the patient, in a peculiar flaccid and soft condition of the uterine tissue, called marciditas uteri.

The book closes with a chapter on "Chlorosis," which is defined to be "probably a neurosis of the ganglionic system of nerves," and which is shown to be an entirely different disease from anæmia, with which it has not unfrequently been supposed to be synonymous. The treatment should consist in attempting to remove the cause of the disorder, to cure the neurosis itself, and to repair the damage which it has effected in the system." Nervous tonics, electricity, change of air and scene, nutritious diet, chalybeates, exercise, sea-bathing, &c., are recommended as remedies.

The intimate acquaintance with foreign literature, and the thorough and scientific manner in which the various subjects are treated, combine to make this work most congenial to a cultivated medical mind; while the numerous practical hints, and the easy and agreeable style in which it is written, make it a highly interesting and instructive book, not only to the specialist, but also to the general practitioner. Our great regret is, that our limited space has obliged us to pass over many portions of the book more superficially than we should have wished; to give a review of all there is good and useful in it, would necessitate a transcription of very nearly the whole book. P. M.

Clinical Lectures on the Diseases of Women. By Sir James Y. Simpson, Bart., M.D., D.C.L., late Professor of Midwifery in the University of Edinburgh. Edited by Alex. R. Simpson, M.D., Professor of Medicine and Midwifery, and Diseases of Women and Children, in the University of Edinburgh. New York: D. Appleton & Co. 1872. 8vo, pp. 788.

This handsome volume chiefly comprises the Lectures of Professor Simpson, delivered in Edinburgh, and published from time to time in the *Medical Times and Gazette* of London, during the years 1859-1861. To the labors of his nephew, Dr. Alexander Simpson, we are indebted for the collection of those already published, and the addition of several heretofore unpublished, and their compilation into the above work. Out of the fifty lectures in the book, ten are entirely new, having never been in print, though revised, as were all, by their author.

The lectures, being clinical, are not arranged as would be the case with a systematic text-book; but, thanks to the editor, there is a copious table of contents and a full index.

It is not necessary for us to say that this work is a most valuable addition to gynæcological literature: the name of its illustrious author commends it beforehand to such as are especially studying the diseases of women. Covering as it does almost the entire field of women's diseases, the gynæcologist will find it almost unequalled as a practically instructive companion.

To do full justice to the particular views of Professor Simpson, as here given us, would command more space than the pages at our disposal will allow. We will therefore simply take a few of the numerous subjects treated of, and place their principal points before our readers.

In Lectures II. and III., on Vesico-Vaginal Fistula, we find the author placing unnecessary importance on some trivial modifications in the operations by himself. The "iron wire splint" which he recommends "to consolidate the lips of the fistula and surrounding parts, and to keep them perfectly at rest in all directions," is, we consider, far from being of any advantage, complicating the operation, and inferior to Bozeman's "button" or Sims' "shield," which have both been long laid aside by the most eminent operators. Tying the sutures, as he also recommends, by a single knot, we fail to see can, or ever will, supersede the quick and reliable twisting.

Lectures X. and XI., on Cancer of the Uterus and Mamma, are most excellent ones, the subjects being ably and exhaustively treated; the author advocating operative interference in cases not too far advanced. The lectures on Dysmenorrhœa are almost equally valuable; and especially on membranous dysmenorrhœa we find more matter than is the case in many other works.

Ovarian Dropsy is the subject of Lectures XXV. and the succeeding six, and, excepting the recent work by Professor Peaslee of this city, give the most complete material on this not uncommon disease. His views on ovariotomy are similar to those of Spencer Wells, and, indeed, the author has drawn these portions largely from his illustrious confrère. One omission we think is inexcusable, and that is, the absence of as full a recognition of the ovariotomists of America as they certainly are entitled to. Of the various methods of treating the pedicle, the author prefers the clamp.

Lecture XLI., on Amenorrhœa, is also deserving of mention, though we hesitate to endorse the author's advocacy of the intra-uterine stem pessary, an instrument which, in this country at least, has but few advocates; and his statement that he "never saw the use of this instrument for the cure of amenorrhœa attended with any untoward results," is one that cannot be repeated by the majority of gynæcologists in America. In his hands, however, it certainly seems to have been a safe and reliable menstrual excitor.

The lectures on Fibroids and Polypi are evidences of the author's laborious study and large practical experience. That they are among the best in the work, is sufficient praise.

Lecture L., the last, is on Retroversio Uteri. Nothing especially attracts our attention, excepting here again we find him advocating the intra-uterine stem pessary.

Having thus but briefly and imperfectly reviewed this work, we would, in conclusion, offer it to the profession of this country as one that should be constantly studied in conjunction with our own admirable text-book by Professor Thomas. Armed with these two works, the gynæcologist may truly be said to possess a library on the diseases of women.

The volume is published in the usual elegant style of all the works issued by the Appletons. D.

HYSTEROLOGY: A TREATISE DESCRIPTIVE AND CLINICAL ON THE DISEASES AND DISPLACEMENTS OF THE UTERUS. By EDWIN NESBIT CHAPMAN, M.A., M.D., late Professor of Obstetrics, Diseases of Women and Children, and Clinical Midwifery in the Long Island College Hospital. New York: Wm. Wood & Co. 1872. 8vo, pp. 504.

THE title and size of this handsome volume is such as to immediately attract attention from such in the profession who are constantly seeking to obtain the most recent and best instruction from those whose experience and learning entitle them to speak with authority. Following as it does so closely upon the last edition of Thomas' work, the gynæcologist will naturally think that it contains new and rare material, and that to successfully treat the uterine diseases of his patients it is essential for him to make a "companion" of this new claimant for honors.

The body of his work, Dr. Chapman informs us, "is a reproduction of my lectures on the diseases and displacements of the uterus," and embodies the results of his observations and experience.

Large as Dr. Chapman's opportunities have evidently been, it is with regret that we are forced to ask, of what use have they been to him? Nowhere in the work do we find anything new in the slightest particular. Commencing with methods of examining women, we find him at the outset recommending the old glass speculum of Fergusson, as one that "may rightfully supplant all others, conferring as it does all their advantages," and also the antiquated instrument of Segalus. Sims' speculum and some of its modifications we are led to believe he has neither seen nor heard of, as they are wholly ignored.

On the use of the uterine sound, our author opens by saying that "an *ordinary bougie* will, for determining the size, direction, and angle of the *cervical* canal, the permeability of the inner and outer, ora uteri, and similar purposes, answer sufficiently well," * though he allows it is deficient in stability and firmness, and he concludes with the statement that "rarely in benign diseases is it necessary to pass the sound through the inner os, or explore with it the proper uterine cavity." With a few remarks on the tenacula, forceps, and caustic-holders, this chapter on examinations closes. And what does it teach? Nothing new! worse than that. The student who may be so unfortunate as to make this work his only guide is left either in total ignorance of the most valuable methods and instruments for uterine examination, or, knowing of such, he is led to believe by the silence of the author that they are unenlightened and unnecessary.

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* The italics are our own.—*Reviewer.*

We started with the intention of reviewing Dr. Chapman's work; but as we believe it is best to remain silent where we cannot praise, we prefer to let our readers judge of the rest of the work from the quotation above. This much we will inform them, that had it been written many, many years ago, it would have done credit to its author; but as it nowhere refers to the labors or even existence of the most eminent gynæcologists of this country and Europe, it certainly does not deserve to be considered a work for the student or practitioner of the present day.

F.

BOOKS RECEIVED.

THE SCIENCE AND PRACTICE OF MEDICINE. By WILLIAM AITKEN, M.D., Edin., Professor of Pathology in the Army Medical School. Third American from the Sixth London Edition, with additions by MEREDITH CLYMER, M.D., Univ. Penn., ex-Professor of the Institutes of Medicine in the University of New York, etc. In two volumes. With steel-plate, map, and one hundred and eighty woodcuts. Philadelphia: Lindsay & Blakiston. 1872. 8vo, pp. 2018.

LECTURES ON THE PRINCIPLES AND PRACTICE OF PHYSIC. Delivered at King's College, London. By SIR THOMAS WATSON, BART., M.D., F.R.S., Physician in Ordinary to the Queen, etc., etc., etc. In two volumes. From the Fifth Revised and Enlarged English Edition. Edited, with additions and numerous illustrations, by HENRY HARTSHORNE, A.M., M.D., Professor of Hygiene in the University of Penn. Philadelphia: Henry Lea. 1872. 8vo, pp. 1872.

A TREATISE ON THE DISEASES OF INFANCY AND CHILDHOOD. Second Edition, Enlarged and thoroughly Revised. By J. LEWIS SMITH, M.D., Curator to the Nursery and Child's Hospital, New York; Physician to the Infants' Hospital, Ward's Island, etc., etc. Philadelphia: Henry C. Lea. 1872. 8vo, pp. 731.

A SYSTEM OF SURGERY; PATHOLOGICAL, DIAGNOSTIC, THERAPEUTIC, AND OPERATIVE. By SAMUEL GROSS, M.D., LL.D., D.C.L. Oxon., Professor of Surgery in the Jefferson Medical College, Philadelphia, etc., etc. Fifth Edition, greatly Enlarged and thoroughly Revised. Illustrated by upwards of fourteen hundred engravings. In two volumes. Philadelphia: Henry C. Lea. 1872. 8vo, pp. 2268.

A PRACTICAL TREATISE ON FRACTURES AND DISLOCATIONS. By FRANK HASTINGS HAMILTON, A.M., M.D., LL.D., Professor of the Practice of Surgery with Operations in Bellevue Hospital Medical College, Surgeon to the Bellevue Hospital, etc., etc., etc. Fourth Edition, Revised and Improved. Illustrated with three hundred and twenty-two woodcuts. Philadelphia: Henry C. Lea. 1871. 8vo, pp. 789.

A TREATISE ON DISEASES OF THE BOWELS. By THOMAS M. MARKOE, M.D., Professor of Surgery in the College of Physicians and Surgeons, etc., etc. New York: D. Appleton & Co. 1872. 8vo, pp. 416.

ON THE FUNCTIONAL DISEASES OF THE RENAL, URINARY, AND REPRODUCTIVE ORGANS, with a General Review of Urinary Pathology. By. D. CAMPBELL BLACK, M.D., L.R.C.S., Edin., Member of the General Council of the University of Glasgow, etc., etc. Philadelphia: Lindsay & Blakiston. 1872. 12mo, pp. 300.

THE URINE AND ITS DERANGEMENTS. With the Application of Physiological Chemistry to the Diagnosis and Treatment of Constitutional as well as Local Diseases. Being a Course of Original Lectures delivered at the University College, London. By GEORGE HARLEY, M.D., F.R.S., Fellow of the Royal College of Physicians, etc., etc. With illustrations. Philadelphia: Lindsay & Blakiston. 1872. 12mo, pp. 334.

URINARY AND RENAL DISEASES. Including Urinary Deposits. Illustrated by numerous Cases and Engravings. By WILLIAM ROBERTS, M.D., Fellow of the Royal College of Physicians, London, Physician to the Manchester Royal Infirmary. Second American from the Second Revised and Enlarged London Edition. Philadelphia: Henry C. Lea. 1872. 8vo, pp. 616.

The Treatment of Syphilis with Subcutaneous Sublimate Injections. By Dr. George Lewin, Prof. at the Frederick William University, and Surgeon in Chief of the Syphilitic Wards and Skin Diseases of the Charité Hospital, Berlin. Translated by Carl Praegler, M.D., and E. H. Gale, M.D. Philadelphia: Lindsay & Blakiston. 1872. 12mo, pp. 249.

Practical Lessons in the Nature and Treatment of the Affections Produced by the Contagious Diseases. With an account of the Primary Syphilitic Poison and of its Communicability, etc., etc. With plain and colored illustrations. Philadelphia: J. B. Lippincott & Co. 1872. 12mo, pp. 336.

EDITORIAL NOTES.

In the August number of this volume of the Journal, there appeared an article by Dr. Ely Van de Warker, of Syracuse, on "The Use of the Seton in the Treatment of some Cases of Chronic Affections of the Womb," in which he ignores, evidently unintentionally, the priority of others as to that method of treatment. As long ago as September, 1870, Dr. F. D. Lente, of Cold Spring, N. Y., published an article on the same subject, and claimed the originality of it. As neither Dr. Van de Warker nor any of the audience before which he read his paper doubted his claim to the originality of the treatment, for their information as well as in justice to Dr. Lente, we call attention to the above facts.

Change of Publishers.—As will be seen by reference to the title-page, Wm. Wood & Co., the well-known medical publishers of this city, have assumed control of the business management of the Journal. All communications relating to the business of the Journal should hereafter be addressed to them at 27 Great Jones Street, New York.

THE AMERICAN
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DISEASES OF WOMEN AND CHILDREN.

VOL. V.] FEBRUARY, 1873. [No. 4.

ORIGINAL COMMUNICATIONS.

A CASE OF OVARIAN TUMOR.

By WILLIAM T. LUSK, M.D.,
Professor of Obstetrics, Diseases of Women, Diseases of Infancy and Clinical Midwifery in Bellevue Hospital Medical College, New-York.

The following case of ovarian tumor, which was for some time under observation at Bellevue Hospital, serves to illustrate the difficulties which still surround the diagnosis of these growths.

Jane Fay, a single woman, forty years of age, of Irish birth, a domestic by occupation, was admitted into the hospital for the second time October 13th, 1871. At the beginning of my term of service, January, 1872, I gathered the following particulars of her history: The patient stated that she had always been of temperate habits, that she came of a healthy family, and had always enjoyed excellent health up to three years previous. About that time she noticed that, without any apparent cause, she was losing flesh and strength, and that her stomach was becoming extremely irritable. After about a month she was attacked with persistent vomiting of bilious matter, which confined her to the bed for three weeks. For nine months the irritability of the stomach continued, so that she could scarcely retain any food. Two months after the vomiting began, she fell down a flight of stairs, reaching the floor in a sitting posture. For an hour or two after the fall she was unable to speak, though she retained her consciousness. Soon after this she began to feel a sharp pain in the right (?) lumbar region; coming on at first at intervals of a few days, but in the course of nine months the pain had become almost constant. At the end of this time, she began to have pain in the hypogastric region also; at first about once a week, but gradually increasing in frequency. It was about this time that she first noticed herself to be growing larger. There was no circumscribed swelling, according to her account, but uniform enlargement of the abdomen. Her menses continued regular up to eighteen months before admission, when they ceased altogether. The patient never suffered from œdema, never had any trouble with her water, nor with her bowels, except slight constipation. Once before she had been more than a year in Bellevue Hospital, and had been discharged at her own request, only a few months previous to the present admission. In the interval there had been gradual increase of the swelling, but the pains and irritability of the stomach had meanwhile been less troublesome.

At the time of admission she was emaciated, but in other respects was much better than when she left the hospital six months before. Her appetite, however, was poor and her bowels constipated. The urine was normal. She complained occasionally of pains below the ensiform cartilage, in the right lumbar region, and near the umbilicus.

Upon *physical examination*, a large tumor was found filling the abdominal cavity, extending from the pubis to within an inch of the ensiform cartilage, and extending across both lumbar regions.

The tumor felt hard and elastic, excepting at the upper part on the left side. It was irregular in outline, dull on percussion, and tender in spots. Indistinct fluctuation was detected at isolated points. The integuments were freely movable over the tumor. The abdominal veins were enlarged.

The following were the measurements then taken:

Pubis to ensiform cartilage, ...	18½	inches.
Circumference, ...	42	"
Umbilicus to left spinous proc. of vertebra,	22	"
" " right " " " "	20	"

On *vaginal examination*, the tumor was found to press down into the pelvic cavity behind the vagina, the uterus was carried forward and upward above the pubis, and, though difficult of access, seemed to be of natural size. A small quantity of clear fluid was withdrawn, by a hypodermic syringe, from one of the points where fluctuation was detected.

In view of the fact of the fairly rapid growth of the tumor, the amenorrhœa, the emaciation of the patient, the impairment of her health, the enlargement of the abdominal veins, the character of the fluid, and the strong impression which prevailed among the house staff, who had been familiar with her case during her previous residence in the hospital, that the tumor at an earlier period of growth was distinctly limited to the left iliac region, the case was pronounced, in the presence of the medical class, one of ovarian tumor. The irregular outline of the growth led to the opinion that it was polycystic, and the mobility of the integuments over the tumor made me infer that the adhesions were not extensive. The case seemed a favorable one for operation, and she was accordingly recommended for removal to the Woman's Hospital. The patient at this time expressed her willingness to incur any risks, and earnestly entreated that something might be done for her.

On arriving at the Woman's Hospital the patient was carefully examined.

The tumor was found to be of irregular shape, and no fluctuation was detected. The uterus appeared to be firmly fixed, and was displaced upward. The integuments were drawn tightly over the tumor, and were thought to be adherent. The diagnosis was declared to hang between a uterine fibro-cystic tumor, and a semi-solid tumor of the ovary with firm adhesions to the uterus and the abdominal walls. It was decided that in either event the case was an unsuitable one for operation. She was therefore returned to "Bellevue" with the suggestion that tapping should be tried as a means toward clearing up the diagnosis.

Upon consultation with my colleagues at the hospital, both of whom regarded the tumor as unsuited for an operation, it was concluded not to interfere further with the patient, who accordingly remained in the hospital, gradually failing in strength. After a time the pains became so intense that only large hypodermic injections of morphia sufficed to appease them. There was constant nausea, utter failure of appetite, and rapidly increasing marasmus up to the 27th of October, when death took place from exhaustion.

Upon post-mortem examination, the tumor proved to be an ovarian polycyst, and was found to press against the uterus, but not to be adherent to it. There were slight but readily separable adhesions to the abdominal parietes, and above to the transverse colon. The pedicle must have been from 3 to 4 inches in length. The cysts were very numerous, and varied in size from a pea to a child's head. The larger cysts contained a clear, straw-colored fluid; the smaller ones, a dense colloidal matter. Three of the cysts were distinctly purulent. In none were there evidences of the admixture of blood.

The specimen shows that the portion of the tumor felt directly through the abdominal wall consisted, for the most part, of small cysts arranged like a honeycomb and filled with a dense jelly-like contents, which of course furnished no fluctuation. Only a mere accident could have disclosed the presence of a large cyst with a more fluid contents. On the day of the patient's visit to the hospital, the walls of the abdomen were probably rendered additionally tense from flatus. The uterus was so displaced as to render the introduction of the probe impossible, and so compressed by the tumor as to be completely immovable.

It will be seen that, had tapping been resorted to, the operator would, in all probability, have penetrated only the alveolar structure of the tumor, and have found, in the absence of fluid, fresh evidence of its solid character.

It is difficult to see how a positive conclusion could have been reached without an exploratory incision. When we bear in mind the entreaties of the patient, at a tolerably early stage of development, that an operation should be tried, the intensity of her subsequent sufferings, and the rather exceptionally favorable conditions found to exist, after the death of the patient, for an operation, it is hard to resist the conclusion that we were derelict to our duty in not resorting to incision as a final aid to diagnosis.

THE ARTIFICIAL DILATATION OF THE ANUS AND RECTUM, FOR DIAGNOSTIC, OPERATIVE, AND PROPHYLACTIC PURPOSES, AND ITS INDICATIONS IN SURGICAL DISEASES OF THE RECTUM.

BY PROFESSOR G. SIMON, of Heidelberg.*
(Translated by desire of the author by PAUL MUNDE, M.D., New-York.†)

GENTLEMEN: I take the liberty of discussing here the methods by means of which the rectum is made approachable, because, through recent improvements in them, results have been obtained which a short time ago appeared impossible. Up to a few years ago, the examination of the rectum was limited to palpation with one, or at most, two fingers, and to inspection with the narrow rectal specula, and only the most necessary and simple operations, such as removal of tumors, dilatation of strictures, etc., were performed; but now we have learned to palpate the abdominal cavity with four fingers or the whole hand, and to introduce the largest sizes of vaginal specula into the rectum. Sims has closed a fresh vesicorectal wound by means of sutures, and I have even successfully performed three plastic operations in the rectum. I shall present a patient to you, to-day, who had two rectal fistulas, remaining after a gunshot wound of the pelvis, which I closed by vivifying and sewing the edges. (See beyond. Wounds and Fistulas.) A discussion of the various modes of dilatation of the anus and rectum appears so much the more justifiable as, strange to say, even the most simple of these procedures seem to be entirely unknown to many physicians in, and still more so out of Germany. Every year cases come under my notice where foreign bodies, which could have been easily removed by hand, under chloroform, were extracted by means of most complicated manœuvres and instruments, frequently not without doing considerable injury to the rectal walls.

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* A paper read at the first Congress of the German Surgical Association, Berlin, April 13th, 1872, in the lecture-room of the Surgical Clinique. (See N. Y. *Med. Record*, June 1st, 1872, and *Langenbeck, Archiv für Chirurgie*, XV.)

† The subject of this paper is so intimately connected with a large number of cases occurring in gynæcological practice, and is, besides, of such general interest, that the translator has thought it preferable to bring the article in full, rather than mutilate it by leaving out those short pieces which refer solely to surgery.

We have two principal methods of dilating the anus and the rectum, the *bloodless* and the *bloody* method, which can each be used in various ways.

The "bloodless" (*unblutige*) method consists in the dilatation of the anus under chloroform, which relaxes the sphincter so that the muscle can be stretched to an astonishing degree without the slightest injury to the patient. The dilatation can be made with the fingers, with half of or the whole hand, or with specula. With the first we dilate for the purpose of palpation. With two fingers we can pass into the anus of any child, with half of the hand into that of older children and all adults, with the whole hand into the anus of all those adults* whose pelvic outlet is not too narrow for the passage of the hand. With men such a degree of narrowness occurs more frequently, with women only exceptionally.† In many cases a hand which in its greatest circumference measures no more than 25 centimetres (10 inches) can pass into the rectum without injuring the anus; in others, the production of several notches in the sharp cutaneous border of the anus will facilitate the introduction; and rarely will an incision through the sphincter, which I perform in the posterior raphé, become necessary. I prefer this incision in the raphé to two lateral incisions, because the former gives more space than the latter, which cannot be carried deep enough on account of the adjacent bones. When the whole hand has been brought into that part of the rectum lying in the concavity of the sacrum as far up as the promontory, we can then introduce three, and even four fingers still further up and a small distance into the sigmoid flexure, and reach above the umbilicus without in the least injuring the intestines or the peritoneum, and, the upper portion of the rectum and the sigmoid flexure being extremely movable, can palpate the whole abdomen as far as the lower edge of the kidney.* If all violence be avoided during the exploration of the upper portion of the intestines, and especially if no attempt be made to introduce the whole hand into this part, the examination is entirely without danger. In introducing the hand through the anus, however, more force is occasionally required, and is perfectly admissible, since neither dangerous injuries nor any damage to the subsequent contractility of the sphincter are to be apprehended. If the muscle be so dilatable as to allow the passage of the hand without difficulty or after superficial incision of the cutaneous margin, no disturbance in its function is produced; if it be necessary to divide the sphincter, the incontinentia alvi lasts 10 or 12 days until the wound is healed. The importance of such a dilatability of the anus during anæsthesia, and the possibility of safely palpating the organs of the pelvis and the abdomen up to the middle of the latter cavity, the finger being only separated from the organs to be examined by the thin intestinal wall, is very evident. For it is possible, as already mentioned, not only to find foreign bodies in the lower part of the sigmoid flexure, and to extract them without injury to the intestine, but we can also diagnosticate diseases of the rectum, uterus, ovaries, and the pelvis in general, which consist in changes of shape, position, and consistence, with much greater certainty than by the former methods of examination. In examining with four fingers, and, better still, with the fingers of the whole hand introduced into the rectum, we can reach the fundus and anterior wall of the uterus from behind, grasp the ovaries between the thumb and the other fingers, and feel any increase in size or irregularity; we can, in the male, palpate the bladder up to its vertex and detect any diseased condition, such as stones, their size, shape, and number. I am convinced that, the whole hand being introduced, we can, with the fingers, by direct palpation, ascertain the presence of invagination, accumulation of fæces, strictures, etc., as far up as a portion of the sigmoid flexure, feel tumors of the posterior abdominal wall, the mesenteric glands, kidneys, and most of the other organs which are situated in the lower two thirds of the abdomen or reach down as far,* and thereby gain most useful diagnostical aid. In two cases of ovarian tumor, in which I made use of the manual examination, and in which the result of the exploration was controlled by the subsequent extirpation, I accurately determined the length and size of the pedicle, the nature of the healthy ovary, the absence of adhesions to the brim of the pelvis, and, in one case, two fibroid tumors of the size of cherries, which were situated at the fundus uteri. In a case of multiple fibroid tumors, where I explored in this manner, I distinctly felt the site, size, and breadth of base of the tumors on the corpus and fundus uteri. In one case, I even combined a therapeutical act with the examination, in liberating one of the fibroids of the fundus, which had become wedged into the pelvic cavity and could not be loosened by the fingers alone, from its incarceration, and pushing it with the hand into the abdominal cavity, where I could palpate it with the enlarged uterus in its whole extent. In one case of hydronephrosis I could distinctly ascertain that the tumor had no connection with the pelvic organs, which were entirely devoid of adhesions and allowed me to pass my hand between them and the tumor to the anterior abdominal wall, thus permitting me plainly to recognize the lower border of the hydronephrosis and its attachment at the posterior boundary of the abdomen. The extensiveness of the field of exploration thus opened through the rectum, and the accuracy of the results of palpation, lead me to consider the examination with the half or whole hand as applicable to all cases of important affections of the pelvic or abdominal organs, where the modes of exploration hitherto usually employed do not give sufficient information. The inconvenience of putting the patient under chloroform is, in my opinion, completely outweighed by the importance of the information obtained in this manner. The manual examination may be assisted by the simultaneous palpation of the organs in question with the other hand through the abdominal walls, (bi-manual examination,) as is likewise done in the ordinary explorations per rectum with one or two fingers.

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* I call the examination with four fingers which are introduced up to the origin of the thumb, "examination with half of the hand," and that where the whole hand and part of the forearm are passed into the rectum, "examination by hand, or manual examination."

† It is the greater width of the inferior strait of the pelvis in the female sex which makes this mode of examination of more value even to the gynæcologist than to the surgeon, a fact justifying the publication of this paper in this journal.—*Translator.*

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* The lower point of the kidney can be reached if the thigh of the person under examination be strongly flexed.

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* Tumors of the liver, stomach, and spleen must be palpable in the same manner, if they reach as far down as the umbilicus.

The *dilatation with specula* serves for the inspection of the canal of the rectum and for the performance of operations on its walls. Having heard the possibility, gentlemen, of passing the whole hand into the rectum, you will not be surprised to learn that, instead of the extremely narrow rectal specula formerly in use, I now introduce my concave vaginal specula and plates, generally the largest measuring 5–5½ centimetres (2½″) in breadth, into the rectum. At the same time, to produce general dilatation, I also frequently use other instruments.* To draw back the lateral walls, I employ the vaginal holders; to pull up the sharp projecting rim of the skin at the anterior margin of the anus, the plate-shaped specula, and frequently double pointed tenacula. After the anus has been dilated in the "breach-back position,"† the anterior rectal wall, where most operations have to be performed, is placed directly opposite the dilated entrance, so that the denudation and approximation of defects can be executed with no less exactitude than in a case of vesico-vaginal fistula, which is laid bare by appropriate specula. In rare instances only, which I shall specify further on, does it become necessary to enlarge the mouth of the anus by an incision.

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* See the description of these instruments in my article "The Cure of Vesico-vaginal fistulæ, etc.," Rostock, 1862.

It may be well to mention briefly the shape of the vaginal holders, (Scheidenhalter,) and the vaginal plates (Scheidenplatten). The former are slender steel instruments about a foot and a half long, with handles, 1″ broad, and the last 3″ of the steel portion bent at a right angle. This is introduced into the vagina, and the lateral walls are drawn apart by an assistant on either side, two "holders," of course, always being necessary. The "plates" are similar to Sims's speculum, but a little shorter and broader, much less concave, and cut off square at the end, in order to stretch the walls of vagina or rectum as much as possible.—*Translator.*

† This position, which I also use in operating for vesico-vaginal fistula, is an exaggerated lithotomy position, and more important still for operations in the rectum than for those of the vagina.

The second principal method, *the bloody dilatation of the anus and rectum*, can consist in incising the sharp cutaneous border of the anterior margin of the anus, in incisions through the sphincter, or in the formation of an ano-perinæal flap, according to Hueter.

I have frequently performed the incisions into the projecting anterior border of the anus, in order to obtain a better view of the anterior wall of the rectum during plastic operations. They are very useful when, during dilatation with a broad gutter-shaped speculum, the sharp border of the anus becomes stretched like a curtain before the anterior rectal wall. Incisions of no greater depth than ½ centimetre (2‴) through the anterior cutaneous border, at both sides, allow this part of the anterior wall to become visible, and permit a much greater dilatation of the anus than before.

The incisions through the sphincter ani, for the purpose of dilatation, are made much deeper than the cutaneous incisions just mentioned, and produce a correspondingly great expansion; besides, they have the still greater advantage of permitting the fæces to pass freely from the rectum, until the sphincter ani has again become firmly united. For the purpose of facilitating the approach to the cavity of the rectum, an incision was formerly made, before the bloodless dilatation was known, through the sphincter in the posterior raphé toward the coccyx, in order to reach a carcinoma of the rectum situated high up. This incision in reality makes the approach much easier, for it greatly widens the introitus ani, and also shortens the canal of the rectum and brings it into a straight line with the exterior. Inasmuch as the posterior wall of this canal runs from behind and above in a curve downward and outward to the anus, it becomes evident that the raphé incision dividing this wall up to the point of its curvature upward, brings the upper portion in a direct line with the dilated mouth of the anus, shortens the length of the rectum itself, and materially facilitates the operation, such as the removal of a distant carcinoma. This incision has, however, through the introduction of anæsthesia and the application of the instruments for dilatation mentioned above, become superfluous for the opening of the cavity of the rectum, the very purpose for which it was adopted, and is very seldom used to permit of greater expansion of the anus alone. I use it for this purpose only in rare cases, where an excessive narrowness or rigidity of the sphincter prevents the introduction of the hand for a diagnostical, or of instruments for an operative object, without tearing the mouth of the rectum, and where the cutaneous incisions are insufficient. The free division of the sphincter was necessary in operating on a fistula situated in the posterior wall of the rectum, deep in the concavity of the sacrum, and therefore very difficult of access. The incisions in the sphincter serve, besides for the diagnostical and operative, for a still more important prophylactical purpose, namely, the free passage of the fæces after operations. They prevent the freshly united wound from being disturbed by the pressure of fæcal matter. Baker Brown, who practised the division of the sphincter with this object, after all plastic operations of the perinæum and recto-vaginal wall, made two lateral incisions through the border of the anus and the sphincter. These lateral incisions are not, however, in my opinion, very practical, and are excelled by the incision in the posterior raphé, which I would recommend to the profession. Baker Brown's incisions neither shorten the rectal canal, nor do they facilitate the exit of the fæces by straightening the course of the rectum; they also unite much quicker, often as soon as in twenty-four hours, so that their effect is too evanescent to be of real value. With the incision through the raphé, however, the fæces arrive externally by the shortest route, and, passing over the edge of the wound, prevent its union by first intention, which always takes place by second intention in ten or twelve days. After this period, the new cicatrix of the closed defect, for the safety of which it was made, has acquired firmness enough to withstand the pressure of the fæces with impunity. For this very purpose I frequently employ the incision in the raphé, as I shall specify further on, cutting 2–2½ centimetres (1″) into the parts, according to the individual case, and thereby dividing the posterior border of the anus and the lower portion of the rectum with the external and internal sphincters. The pain is of consequence only during the first days, when the bowels move; later it is hardly mentioned by the patient, especially if the bowels be kept loose. On the third and fourth days, the edges become covered with granulations, and in ten or twelve days the wound is closed from below, and the continentia alvi completely restored. Only in two out of thirty or forty cases did the incision remain open; first, in the patient whom I intend prosenting to you, and secondly, in a patient where I tried to remove a severe stricture. In the former instance, however, this unfortunate event did not occur until the third division in the same direction, and with the latter the immediate introduction of dilating tents prevented the union. In both cases a subsequent denudation and union of the cicatrized surfaces was followed by cure and the continentia alvi completely restored, thus showing how little a permanent remaining open of the prophylactic incisions of the sphincter is to be apprehended. In order to avoid all circumstances, however, which might be followed by this undesirable consequence, it may be advisable not to make the incision before, but after the operation, so as to prevent the surfaces of the wound from being squeezed, jammed, and torn apart during the whole operation.

We have finally to mention the ano-perinæal flap proposed by Hueter, (of Greifswald.) This flap is oblong, rounded at the apex, and is cut out of the perinæum in such a way as to include the anus and the sphincters; it is then turned back toward its base, and the uncovered rectum, shortened in proportion to the thickness of the flap, made more easily approachable in its upper parts. After the conclusion of the operation in the rectal cavity, the flap is returned to and fastened in its original position by deep sutures. This flap is quite an ingenious idea, but has, in my opinion, with justice, not been adopted.* I have often performed it on the dead body, but could never make up my mind to try it on a living patient. First of all, bloody dilatation, for the extirpation of a distant carcinoma of the rectum, is unnecessary. Should an operator, however, desire to perform it nevertheless, he would certainly prefer the more simple and just as reliable incision through the raphé; for the flap incision is decidedly inferior to that in the raphé, in that the wound is much larger and attended with greater loss of blood, and that after the flap has been returned to and attached in its former place, the passage of the fæces is hindered as much as before the operation. The size and thickness of the flap make its excision rather a severe operation, the danger of which must be increased by the division of numerous vessels, particularly veins, which are very plentiful, and frequently much dilated in this particular region; profuse hemorrhage and pyæmia may result. The accumulating fæces, caused by the preservation of the sphincter, may easily push between the edges of the wound of the flap and produce inflammation, separation of the united wound, or the formation of a fistula.

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* During the discussion on this operation, it was ascertained that Prof. Schönborn, in Königsberg, had alone performed it, and he now disapproved of the procedure.

After these general explanations it may be interesting to you, gentlemen, to ascertain the principles by which I am guided as regards bloody or bloodless dilatation in various pathological conditions of the rectum. I shall not enter into an enumeration of the diseases of the pelvic and abdominal organs which necessitate an examination with four fingers or the whole hand, and consequently the artificial dilatation of the anus and rectum, for fear of encroaching too much on your patience. I would only remind you that, for *diagnostic purposes* generally, the bloodless dilatation, much less frequently the bloody, in the shape of cutaneous incisions or the raphé cut—which I here also prefer to the lateral incision through the sphincter—are indicated. Should it appear necessary to perform the raphé cut, the immediate union of the edges by sutures after the examination would be advantageous. Considering now the pathological conditions of the rectum which require an operative interference, we find the following indications for a bloodless or bloody dilatation:

1. *The extraction of foreign bodies* will mostly be possible by bloodless dilatation under chloroform, which will enable you to perform the extraction with half, or, if the body be situated high up, the whole hand, with or without the assistance of long forceps. Only then, when the foreign body is situated very high up, and the sphincter will not allow the passage of the whole hand, does it become necessary to perform the incision in the posterior raphé under chloroform. The incision is certainly much preferable to the extraction with instruments, without the introduction of the hand as a guide, which under such circumstances would undoubtedly be very difficult and apt to produce injury to the parts.

2. *Wounds of the Rectum.* In incised wounds of the rectum the bloodless dilatation with the instrument mentioned above, and the union with sutures, is indicated. The free exit of the fæces during convalescence is permitted by the raphé incision, as a prophylactic measure. In such wounds, where a bloody suture is not in place, such as gunshot wounds, the prophylactic raphé incision is alone to be made, in order to prevent the fæces from passing into the wound and disturbing its cicatrization, but to allow them to pass freely outward through the

non-contracted sphincter. The fulfilment of this chief indication will not seldom produce a cure. Should the incision in the raphé be healed and the wound still remain open, I should repeat the incision; if again unsuccessful, and if the wound, which has now become a fistula, be still but immaterially diminished in size, I should perform the operation of paring the edges and uniting them by sutures. Sims, as mentioned above, closed the wound of a lithotomy operation per rectum immediately afterward with silver sutures, and procured a cure. During the late war, I observed various gunshot wounds of the rectum, and treated three patients myself. Two of these, who had been under the care of other surgeons during six weeks, and who were constantly passing fæces through the external openings of the wound, and were exceedingly run down by fæcal abscesses, collections of pus, and high fever, were cured in a short time by the free incision of the sphincter posteriorly. The exit of fæces from the wounds ceased immediately after the incision, and in a fortnight all three wounds, that of the intestine, the bullet-track, and the incision were healed. In the third case the fistulous edges of the wound would not unite, notwithstanding repeated cuts through the raphé, and the regular operation for fistula had finally to be performed. The prophylactic incision through the raphé, which had been recommended by older military surgeons—and, after the above experience, ought to be placed in the first rank among the therapeutics for gunshot wounds of the rectum—curious to relate, was neglected and even forgotten by some surgeons. In some works on military surgery—for instance, Stromeyer—it is not mentioned at all; in others, (Demme,) an unfavorable opinion is given, although the author had no personal experience on the subject; and, as far as I am aware, in the last (Franco-German) war it was practiced by no other surgeon but myself. That this was of no particular service to the respective wounded will be demonstrated by me in a subsequent detailed paper on "Gunshot wounds of the rectum." The sooner this therapeutical incision through the raphé is performed, the sooner is the cure to be expected; but even four and five weeks after the injury a cure can be produced, as my cases prove, by allowing a free exit to the fæces.

3. *Operations of Fistulæ in the Walls of the Rectal Cavity.* Ordinary "rectal fistulæ," or, more correctly, "recto-perinæal fistulæ" at the inferior portion of the rectum, are very common, and, being treated of in every text-book, need no discussion here. I should merely like to mention that in searching for this fistula, and stretching the anal border in dividing it, a gutter-shaped speculum of the same breadth as Sims', or still broader, is much more convenient than the ordinary rectal speculum with several branches. I would call attention further to the fact that these incisions of fistulæ prove how little ground there is for the fear of those physicians who do not perform the division of the sphincter because they apprehend incontinentia alvi after it. In this incision for fistula, the division of the soft part between the fistula and the rectum is very frequently combined with the division of the sphincter, and this incision must also heal by second intention; but nobody hesitates to perform it

for fear of an insufficiency of the sphincter resulting from it.

Fistulæ in the upper portions of the rectum are much less common than the recto-perinæal fistulæ just mentioned. In men, I have observed three fistulæ in two patients, not counting the gunshot wounds cured by the cut through the sphincter related above. They had remained after gunshot wounds of the rectum. In one of the patients the bladder and the rectum were pierced and two fistulæ remained in the latter, of which one communicated with the bladder, the other with the external skin near the sacrum. Both fistulæ were operated on and cured. The second patient, whom we received into the clinique only recently, nearly two years after the injury, was wounded by a bullet which pierced the nates from the right to the left side and injured the posterior wall of the rectum; in this wall there was a hole, which communicated with the still open canal of the wound through the nates, allowing flatus and fluid fæces to pass occasionally from both openings. In order to keep these irritants from the fistulæ, I divided the sphincter and cauterized the opening. Should no cure ensue now, I shall perform the regular operation for fistula.

In women, I have twice operated per rectum; once a recto-vaginal fistula, situated very high up, and once a vesico-rectal fistula, which has probably not been observed in the female before. Both came on after difficult labor. In the first case, which I saw in 1865, after two unsuccessful operations through the vagina, I operated on the fistula through the rectum and cured it. (See my *Mittheilungen aus der Rostocker Klinik*, II. Abth. S.

305, Prag, 1868.) In the second patient, where the upper thirds of the vaginal walls are almost completely adherent, and a communication between the bladder and rectum exists through the point of agglutination,* the fistula could of course be operated on only through the rectum. I have attempted to cure this fistula already three times, but unfavorable circumstances (the situation of the fistula in cicatricial tissue) prevented success. I shall try to cure it by the sliding of flaps from the rectal wall.†

The operation for fistulæ of the anterior wall of the rectum can be performed, after the dilatation of the anus with my instruments, with the same accuracy and with the same favorable results as in an easily accessible vesico-vaginal fistula. It is, therefore, surprising that no other operator besides myself has adopted this method in recto-vaginal fistulæ, situated high up, which could not be operated in the usual way through the vagina.

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* The catheter, introduced into the bladder. passes immediately behind (over) the lower border of the cicatrix in the vagina, through the fistula, into the rectum.

† I assisted at the operation of undermining two transverse flaps of rectal mucous membrane above and below the fistula, and uniting them over the opening, (May, 1872;) the operation was unsuccessful. In September, 1872, Prof. Simon showed me the patient, now cured by the fifth and last operation, which consisted in loosening the lower part of the anterior wall of the vagina from its attachments and sewing it into the rectal fistula, thus performing a modification of Kolpokleisis. (The condition of things rather resembles that represented in diagram No. 62 of Prof. Thomas's *Diseases of Women*, with the difference that the upper portion of the vagina is almost completely obliterated; the point C in the diagram would about correspond to the seat of the recto-vesical fistula.) A small opening remained, which was closed by cauterization. The mucous membrane of the vagina, of about the size of a two-cent piece, could easily be seen filling out the hole in the anterior wall of the rectum, when the anus was dilated by the broad speculum.—TRANSLATOR.

Those fistulæ which are situated in the upper third can not be brought into view, owing to the projecting arcus pubis, sufficiently to be operated on with desirable exactitude; from the rectum, however, they are curable, and the operator is not reduced to the sad extremity of being obliged to dismiss the patient uncured. The hitherto incurable recto-vaginal fistulæ existing in cases of obliteration or atresia of the vagina, and the recto-vesical and recto-urethral fistulæ in men, are curable through the rectum when dilated in this manner.

Fistulæ in the posterior wall of the rectum are much more difficult of operation than those in the anterior wall, because they are situated deep in the concavity of the sacrum and can only be made accessible with the greatest difficulty. Even the instruments for dilatation do not suffice here, and we have to resort to a deep incision into the raphé as far as the point of the coccyx, dividing the posterior wall of the rectum almost up to the fistula. After making the incision, it was possible for me to operate on and cure the fistula which came under my care. This raphé cut, while making the fistula easy of access, insures at the same time the free exit of the fæces after the operation. Besides myself, Sims alone tried to cure a recto-urethral fistula, which remained after a lateral lithotomy operation, through the rectum, using silver wire; but without success.*

4. *In operating on old perinæal ruptures, complicated with lesions of the rectum*, neither the bloody nor the bloodless dilatation are required; but after the operation

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* See my *Mittheilungen aus der Rostocker Klinik.* Prag, 1868. II. Abtheilung, S. 15.

a prophylactic incision in the raphé is frequently useful. A perfect union is certainly possible with the purgative method, always used by me in the after-treatment, even without the raphé-cut; but still I prefer using it in all cases where the surfaces to be united are extensive, and where, consequently, all means to insure success are indicated. In minor operations, I do not consider the incision necessary. I very frequently perform these operations, and with my method of operating and of after-treatment, including the prophylactic incision through the raphé, I have obtained most excellent results. Dr. M. Hirschberg, my first assistant, will publish shortly, in the *Archiv für klinische Chirurgie*, my method and the operations which have been performed within the last few years.

5. *Operations for the closure of unhealed incisions through the raphé.*—In two cases, which I have already mentioned above, page 9, I closed these incisions in the same manner as I cure old perinæal ruptures, without lesions of the rectum, in women. After paring the edges of the wound, I united them by superficial rectal and deep perinæal sutures, and effected cures, in one case after two, in the other after one operation. Continentia alvi was restored in both instances. Prophylactic incisions through the raphé were not made, as they could only have been performed laterally or anteriorly, and would then, for reasons mentioned before, (page 577,) have afforded but little advantage for the passage of the fæces. I therefore purged the patients every other day, the fluid fæces passed the anus, which had become very

narrow after the sutures were tied, and a cure was obtained.

6. *Pseudo-plasmata of the rectal cavity.*—Carcinomata of the rectum, the commonest pseudo-plasmata, even when situated very high up, can easily be brought into view by dilating with the instruments used by me in exposing and operating on vesico-vaginal fistulæ. If the carcinoma be confined to the rectal walls and still movable, consequently the adjacent parts be not yet implicated, it will be brought much nearer the introitus when the rectum below it is dilated in every direction. A cancer situated 4-5 centimetres (2″) up, can be thus brought down to within 2 centimetres of the anus, and its extirpation with cutting instruments made perfectly feasible. If, however, as is usually the case when the surgeon is called in, the carcinoma have grown into the neighboring parts, its extirpation with cutting instruments is no longer possible without great danger or permanent damage, such as injury to the peritonæum, bladder, vagina, etc. In these cases I use the sharp-edged curettes with long stems, on the use and advantages of which I take the liberty of saying a few words, because this method of extirpation deserves special attention in carcinoma recti.

A radical cure in advanced cases is, to be sure, to be obtained as little by the curette as with cutting instruments; but we can remove the diseased portions much more easily, safely, and thoroughly than with the latter. The morbid parts are very frangible and soft, and can be scraped out of the sound, firmer tissues with great accuracy; there is no danger of opening one of the large cavities, in case the cancer should not already have grown entirely through its walls, and the hemorrhage is very slight, because the vessels are lacerated and not cut. Reaction was generally minimal, fever was usually wanting, secondary hemorrhage did not occur, and the patient could, as a rule, leave his bed in six or eight days. The results were particularly remarkable in such cases where the considerable constriction of the rectum, the discharge and hemorrhage, the loss of appetite, etc., had so much debilitated the patients as to make their lives a burden to them. By scraping out the almost impassable intestine, it again becomes perfectly permeable, the daily hemorrhage ceases because the vascular vegetations and ulcers have been scraped out, the fœtid discharge is replaced by nearly normal pus, and the pain is diminished because the fæces can easily and quickly pass the diseased spot. With the free passage of fæces the digestive disorders disappear, the appetite improves, the anæmia gradually diminishes, and the patient gains flesh and strength. As soon as the intestine again becomes impermeable, the operation is repeated. By repeatedly scraping out the cancer with the sharp curettes, I have preserved patients, who were literally on the brink of the grave and who would hardly have been undertaken by most of my colleagues, for months and even years in tolerable condition. Quite recently I restored the permeability of an almost closed rectum in this manner, in a patient who had been denied an operation by the first surgeons of London and Paris, and for whom they had prescribed laxatives and dilating tents. The patient was much debilitated, the carcinoma was very high up and of considerable extent. The operation was, notwithstanding, well borne, and the chief object, the opening of the passage, attained.

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* *The scraping out of soft sarcomatous and carcinomatous tumors with broad bases, situated in cavities of the body*, which I introduced into surgical practice two years ago by a publication in the first number of the *Beiträge zur Gynäkologie und Geburtshülfe*, Berlin, 1870, has been employed by me since then in at least 25–30 cases, of which the greater part were cancers of the rectum and uterus; two tumors were removed from the pharynx and several from the orbita. The results were comparatively so favorable that nothing similar could have been obtained by the usual methods of operation. (See article on the same subject by the Translator, in the August number of this Journal.)

In scraping out a carcinoma, I dilate the rectum with the corresponding instruments under choloroform, without making an incision, and have found the two vaginal holders particularly appropriate. Occasionally I introduce the scoop on the forefinger of the left hand without dilating, and scrape out the carcinoma under control of the finger. Frequently, especially in such cases where the carcinoma is not situated very far above the sphincter, where large hemorrhoids exist at the same time, and ulceration of the anal border renders defecation painful, I perform the prophylactic incision through the raphé, in order to allow the fæces to pass freely. In this manner, the accumulation of the fæces on the sore spot and the incarceration of the hemorrhoids when swelling supervenes are avoided, and ulcerations cured. In cancers situated far above the sphincter and of moderate extent, the raphé-cut is unnecessary.*

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* English surgeons of late show a decided preference for Amussat's colotomy for cancer of the rectum. They assert that life is preserved for a longer period in this manner than by directly attacking (extirpating) the carcinoma; after the latter operation the cancer will grow again very rapidly, whereas its progress will be but slow if the fæces—which further the ichorous destruction, and, by constant irritation, the growth of the tumor—are kept away from it by colotomy. I think that when our English colleagues have become acquainted with the scraping-out process, they will drop this opinion; for, irrespective of the fact that many patients who seek surgical assistance, are so much debilitated that colotomy would almost certainly finish them, the latter operation is by no means without danger, even in vigorous people; further, the formation of an artificial anus is only a troublesome and filthy addition to the already existing disease, by which the enjoyment of life to the patient must be considerably diminished; and finally, the results of the scraping-out method do not lead us to expect that life can be more prolonged by colotomy than by repeated scraping. If we find in the respective papers that by colotomy Carter has preserved the life of a patient with almost complete obstruction for four months, Thompson another for two months, Maunder a third for a year and a half, Curling a fourth for seventeen months, (twelve of which were made supportable,) (see Reviews in *Virchow u. Hirsch's Jahresberichte*, 1868, '69, '70,) why, I can report, as contrast, that I have preserved the lives of my patients, by repeatedly scraping out the disease, with rare exceptions longer than one year, and often more than two years, and that most of them led a pretty fair existence until they succumbed at last to marasmus.

For the extirpation of all other pseudo-plasmata which are found in the walls of the rectal cavity, the bloodless, very seldom the bloody, dilatation will be applicable; then all methods of removal can be employed which are thought appropriate.

In conclusion, I take the liberty, gentlemen, of presenting to you the patient with two fistulæ in the cavity of the rectum, and an unclosed incision in the raphé, whom

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* The results of the scraping process are just as remarkable with soft tumors of the pharynx, with broad bases, as they are with carcinomata of the rectum, because the closure of the passage calls forth similar distressing symptoms, and the ordinary methods of removing tumors are not applicable here, or, at least, cannot accomplish similar results. I recently scooped out the right sarcomatous tonsil, which filled two thirds of the pharynx from the velum palati almost to the epiglottis, and originated entirely in the right pharyngeal wall, so thoroughly as to leave only the callous border of the tumor. I had previously tried to operate with the galvanic loop, but the latter constantly slipped off, although I had made the tumor perfectly accessible by dividing the cheek. With a slightly curved scoop, the operation was comparatively easy, the hemorrhage slight, and the patient, aged 56 years, could leave her bed in a week, and take her departure in a fortnight. All her distressing symptoms, with the exception of a slight pain in the pharynx, had disappeared.

I cured by successive operations. (The somewhat lengthy report of the case, being purely surgical, is omitted.) This case, the most complicated which I have as yet witnessed in connection with the rectum, will prove to you, gentlemen, that the possibility of dilating the anus allows even very difficult operations to be performed on the walls of the rectum with great exactitude. I am convinced that many new discoveries can be made in this, not æsthetical to be sure, but certainly most practical direction, which will be of service to suffering humanity.

Appendix.

The introduction of the whole hand into the rectum and the exploration of the abdominal cavity for the purpose of examining tumors of the uterus, the ovaries, and the bladder, have been practiced by me in occasional cases years ago, and were shown on the living subjects to my colleagues, Billroth, Bergmann, and others, during a visit to the clinique in Heidelberg, in September, 1870. I have gradually, by means of a series of observations and examinations at the bedside and experiments on the dead body, developed this manual exploration into a regular method, and make use of it now in all important cases. Independently of me, Prof. Nussbaum, in Munich, has also employed manual palpation. Dr. Popp, his first assistant, has remarked in an article on "Acquired diaphragmatic hernia," on page 89, in the first number of the *Deutsche Zeitschrift für Chirurgie*, which appeared in March, 1872, that his *chef*, Prof. Nussbaum, had repeatedly performed the experiment of passing his hand through the anus and up to the ensiform cartilage, where the hand could be felt through the abdominal wall. Popp believes that this experiment can be used to diagnosticate and relieve an incarcerated diaphragmatic hernia.* I have, indeed, not penetrated into the abdominal cavity as far as Nussbaum, and would warn any one against doing so, as it is not by any means without danger. Nussbaum (whose hand doubtless is very slender, and who probably examined women with short abdomina) did not do any damage; a physician whose hand is less delicate would in most cases, by attempting to pass up so far, cause severe injuries of the intestine and the peritoneum, if he made use, for instance, of as much force as is required to introduce the hand into the anus. There is only room enough for the whole hand in that part of the rectum which lies in the concavity of the sacrum; but into its upper portion, and into the sigmoid flexure, only two and occasionally four fingers can be introduced. With these I could gently lift the intestine up to the umbilicus and 2–3 centimetres higher, but could never reach the ensiform cartilage. For the purpose of obtaining more definite information on the subject, I made a number of experiments on the dead body. I introduced my hand through the anus into the rectum of a male subject, whose abdomen had been opened, after distending the intestine as much as possible by pumping in warm water. After passing the anus I could reach, with perfect ease and without using the least violence, the vicinity of the promontory, and with four fingers into the upper and narrower part of the rectum and the beginning of the sigmoid flexure. With those fingers I lifted up the intestines, and thus approached the umbilicus. In order to ascertain whether the rectum is sufficiently dilatable in its upper portion to allow the passage of the hand, I thrust my hand, which in its greatest circumference measures only 20 centimetres, (8″), so far up as to reach the ensiform process; but examining the intestine afterward, not only the mucous and muscular, but also the serous coats, were found to be torn over my hand in several places. I repeated the experiment in a female body, but lacerated the intestine here also. In order to determine more accurately how the dimensions of the intestine compare with the circumference of the hand, I took the rectum with a portion of the sigmoid flexure from several adult bodies, cut the intestine open in a longitudinal direction, stretched it longitudinally and laterally as far as I could without tearing it and measured its breadth at various spots. I found that up to 14 or 15 centimetres from the anus its breadth amounted to from 20–25 centimetres; but that at this height, where the mesorectum commences, it diminished to 14 or 15 centimetres. As 20–25 centimetres correspond to the circumference of a small and medium hand, it is natural that a forcible introduction of the hand further up must rupture the intestine. If, however, we introduce only two, or at most four, fingers of the hand lying in the spacious lower rectum into its narrower upper portion, and if we avoid all force, we need not fear doing any damage even to the living person. With due observance of these precautions I have never, in the 25 or 30 cases of manual palpation in which I reached with my fingers as far up as the umbilicus, observed either pain or increased sensitiveness. In passing the hand through the anus, however, as mentioned above, it is allowable to employ greater force, because an excessive distension, and even a rupture of the sphincter, is not followed by any lasting injury. In one patient the border of the anus was torn backward through the sphincter; but three weeks afterward the wound was healed, and the muscle in perfect function. I never saw lasting incontinence, or even a weakness of more than twenty-four hours' duration, after the manipulation. In such cases where a rupture of the anus seemed inevitable, I notched the sharp border of the skin in several places, and if that proved insufficient, I divided the sphincter posteriorly. The incisions heal quicker than the lacerations, and the time of the union might even be shortened if we were to close the incision through the sphincter by sutures immediately after the examination. The narrowness of the anus ought not to be considered an obstacle in a case where the exploration is indicated; it is only an excessively narrow pelvis which would render the introduction of the hand impossible. In such cases we must be satisfied with the exploration with four or even with one finger only. Physicians with broad hands will, of course, be able to practice the manual examination much less frequently than those who possess slender hands.*

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* This proposition, which is probably not realizable on account of the extremely high situation of diaphragmatic herniæ in the abdominal cavity, might perhaps be available with more success for other incarcerated herniæ further down, such as inguinal, crural, and umbilical; for the rings of these herniæ, particularly umbilical herniæ, are generally very easy of access, and we know that traction from within very easily relieves the incarceration, at least in the dead body.

ON CATARRH OF THE FALLOPIAN TUBES.—CATARRHAL SALPINGITIS.

By PROF. CARL HENNING, M.D., Leipzig.

(Continued from page 430.)

GENERAL AND LOCAL EFFECTS.

As catarrh of the Fallopian tubes occurs so frequently in the prime of life and so seldom during the puerperal state, and for a considerable period after it, and as, further, it has been so often found in young women and pregnant women, therefore it must be inferred that it very often disappears, and only remains or returns under circumstances unfavorable to its recovery, as for example in prostitutes, in whom its existence, after the change of life can be proved in the cadaver. This conclusion has also been arrived at from the fact that very frequently the results of catarrh are unequivocally present without there being an excessive accumulation of mucus, and without the latter having been discharged into the uterine or abdominal cavities. In the difficult task, in the case of so deep-lying an organ, of separating cause and effect from concomitant and casual circumstances, pathologists will not find fault with me if I first of all, among the probable results of catarrh of the tubes, consider those which are practically demonstrable.

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* The Translator was present during most of the experiments and examinations mentioned in this paper, and can testify to the ease, feasibility, and utility of the manual exploration per rectum, having himself had occasion to palpate the uterus and ovaries in this manner with perfect accuracy. The instruments employed by Simon for dilatation are in the possession of the Translator.

It is evident that an inconsiderable swelling of the mucous membrane, especially of the wider portion of the Fallopian tube, will cause disturbances which are as little likely to be prognosticated during life as demonstrated after death as an inconsiderable increase in the mucous secretion. If those attacked belong to the catamenial age, then the next expected menstruation will not fail to modify the inconsiderable tubal catarrh. In many cases the menstrual hyperæmia seems antagonistic to the existing irritation, and, by quiet and rest on the part of the patient, the latter is frequently cured with the disappearance of the menstrual flow. Of course, in most cases, it is likely that the discharge due to the catarrh, because it does not cause the woman appreciable trouble, and does not warn her to be careful, far from being relieved and cut short by the monthly period, increases in severity upon this occasion, and after the subsidence of the menstrual flow remains and becomes chronic. I thus explain the great frequency of chronic catarrh.

Neither acute nor chronic catarrh can, so long as they remain of a moderate grade, of themselves impede the discharge of the menstrual blood or the fecundation of the ovule; at the most, they can retard its passage through the tube, inasmuch as the peristaltic action of the tubal muscular structure, analogous to that of the intestine, finds in the catarrh of the lining mucous membrane an obstacle to free and uniform movement—we should expect to find some paralysis in other cases of constrictors, (for example, in the sphincter tubæ.) The thin-walled tube cannot be compared to the uterus, whose all-powerful muscular structure is affected but little by a catarrh of its mucous membrane, while the mucous membrane of the tubes is only separated from the serous covering by the microscopically thin muscular layer, whose diseased condition must become much increased whenever the serous membrane is simultaneously affected—and we have seen how often this is the case. As soon as the throwing off of the epithelium goes on too rapidly, there will be a lack of ciliary movement in the neighborhood of the fimbriated extremities and upon the extremities themselves, whose duty it is to conduct the ovule into the tube.

If the tubal secretion loses its alkalinity or becomes acid, as it does in acute catarrh, then the viability of the spermatozoa, and undoubtedly therewith the vitalizing power of the spermatic fluid, becomes endangered; for, in an acid fluid, the male fluid ceases to show any movements of the spermatozoa.

Most of those influences which hinder the passage of the spermatic fluid will also impede the passage of the ovule, and have the effect of producing female sterility.

To such influences belongs thickening of the mucous membrane or of the whole wall, in consequence of very severe inflammatory or of long-continued tubal catarrh; for it engenders narrowing and finally, though very rarely, closure of the canal. A similar effect has a too serpentine form, bending or flexure of the canal—whether results or causes of the catarrh—for by them the calibre of the canal is invariably reduced to a minimum. These changes of position and form of the tube are for the most part the product of some powerful disturbing agent; of an exterior one—for example, the pressing or traction of a tumor of the ovary, of the vestiges of the Wolffian body, or of the uterus, or of an adhesion of the tube to neighboring tissues.

Again, the functions of the sexual organs may be broken if the Fallopian tube, weighted with a swelling of its fimbriated extremity, leaves its appointed place upon the ovary, and sinks deeper in the pelvis. In such a case the ovule must fall into the abdominal cavity. A like result occurs when an adhesion of the fimbriated extremity with a circumscribed point of the ovary leaves the Gräfian follicle outside of the common cavity.

Similar obstructions occur through growths of the mucous membrane, such as excessive folds, œdema of the creases between the folds, papilloma, fatty degeneration of the vessels, polypi, tubercles, and cancer. Moreover, by tumors of the walls; phlebolites and chalk-concrements; by tough, unyielding contents; mucus, blood, and fibrin coagula; croupous membrane. Hence it is evident why prostitutes are generally sterile.

The forwarding of the Ovule

is rendered difficult by chronic catarrh: 1, at the fimbriated extremity, so soon as the cylindrical epithelium no longer furnish cilia, or when the ciliæ become glued together. Again, when the abdominal end of the tube becomes adherent to the ovary, when they should only maintain a mutually intimate contact; inasmuch as the state of adhesion prevents the contraction of the first portion of the tube, which is necessary for drawing up the ovule; in general, by every thing that impedes the muscular activity of the tube, thus impairing its functions, such as too abundant contents, dilatation, fatty degeneration and atrophy of the muscular coat, and inflammation of the serous coat, which also entails paralysis of the subjacent muscular coat. If the obstructions are such that the spermatozoa and ovule cannot come together, (as a closure and abnormal septum in the canal of the tube,) or that the spermatic fluid from too great a dilution is inefficacious, then the result is a failure of impregnation. If, however, portions of the seminal fluid are able to reach the ovule, while the latter cannot advance any further, then the ovule remains in the canal of the tube, and, undergoing development extra uterum, becomes a

Tubal Pregnancy,

which is attended with fatal results always for the child, and in most cases for both the child and mother. Whether tubal catarrh is responsible for such dangerous result—for catarrh or inflammation is an almost constant accompaniment to tubal pregnancy—can, to be sure, not often be determined, just as it cannot always be asserted whether an existing narrowness of the canal has been acquired from a catarrh or is congenital, as the canal of the tube is only formed in the fourth fœtal month, and impermeability of portions of or the whole tube, as well as a narrowness of the organ, may remain in childhood, or until a still later period. Nélaton has shown, in the case of the urethra, that congenital narrowness generally becomes perceptible first about the eighth year.

Among other issues, I will mention

Abscess.

Granted that it frequently has an inflammatory origin, yet it very often owes its origin to catarrh; for a catarrhal secretion is often found in sacculated points of the tubal canal, from which the walls of a tubal abscess are only distinguishable by the brittleness of their tissue, caused by the inflammatory action. Every sacculated accumulation of mucus in the tube can cause inflammation and suppuration as soon as it exercises a certain amount of pressure upon its surroundings, as the contents of a sebaceous follicle upon its sack. None the less will inflammation having an extraneous origin, whether it comes from the peritoneum or from the ovary, increase purulent encysted mucus, and according to circumstances cause it to burst. In the hitherto observed cases the tubal abscess has always first become adherent to some neighboring hollow viscus, and has emptied itself into the same, more frequently into the rectum (Dalmas,* Andral,† Scanzoni, a. a. O. S. 324) than into the bladder, (Dupuytren.‡)

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* J. L. Meissmer. Die Frauenzimmerkrankheiten. Leipz. 1845, s. 209.

† Andral. Anat. Pathol. T. ii. p. 700.

‡ Journal Hebdomadaire de Méd. Tom. vi. p. 24.

Perforating Ulcer

is extremely seldom the result of tubal catarrh, and is last reported by E. Wagner. *

"A woman of 34 years, living in easy circumstances, (in Leipzig,) the mother of four children, was taken sick on the afternoon of August 3d, without known cause, with a slightly painful affection of the abdomen. This increased in degree but slightly, when, on the morning of the 4th, after a short agony, she died. Cæsarian section was immediately performed by Credé, and twins of about 8 months were delivered, who died a few days after. Post-mortem on the 4th of August, 1859, 10 o'clock P.M.

The abdominal cavity contained about ℥ vj of a pale red water-like fluid. Upon the anterior and posterior surfaces of the uterus isolated very thin, yellowish gray, soft coagula, and several thicker ones in the neighborhood of the left, and particularly of the right ovary and right tube. In the right tube, which was nowhere adherent or flexed at a distance of one inch from the fimbriated extremity, upon the posterior wall was found a hole of the size of the seed of ceratonia siliqua, its long axis corresponding to that of the tube. Its immediate surroundings were irregularly roughish † for a breadth of from ⅓ to 1 line. At two points were long, shaggy, pale red masses. The calibre of the tube was perfectly free, and contained a scanty, mucus-like fluid.

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* Monatsschrift für Geburtskunde. Berlin, 1859. Bd. xiv. s. 436.

† In a case of mine, the right tube was closed at its uterine end; mucous membrane rough and shaggy; in the alkaline mucus a few ciliated epithelial cells.

The interior surface of the tube was normal. At the perforation the mucous membrane pouted somewhat outward, and was firmly adherent to the edge of the perforation. The epithelium of the tube was throughout normal; it was absent for the distance of about ½ line just around the perforation. The mucous membrane at this point was easily separable, and contained isolated fat globules and numerous albuminoid molecules; the same was the case with the muscular and serous coats. These coats were at all other points of this tube normal; the right ovary was increased to more than twice its size, and covered on its anterior surface by only a thin layer of stroma and by the peritoneum, and contained an irregularly roundish, brown-red coagulum, having a diameter of 3 lines, and a thin, yellowish periphery. The serous covering at this point was perfectly normal. The left tube and ovary were normal; the latter had no corpus luteum.

"Probably an ulcerative process occurred in the tube similar to the spontaneous ulcers of a like nature in the jejunum and at other points of the intestinal canal. Whether the development of the corpus luteum in the ovary of the same side had an influence in its production. we cannot at present determine. That the peritonitis was the result of the tubal perforation is clear. That it caused death, although it was so very limited in extent, is at present also not explicable, though cases of this kind, especially in peritonitis, are quite frequent."

Here it seems to me it would be well to consider the escape of pus from the tubes into the peritoneal cavity.

A Fallopian tube can only discharge pus into the abdominal cavity, without injury to its wall, when the quantity of pus is so considerable that the functions for the propulsion of an ovule into the uterus are not equal to the burden of the pus. In the healthy woman the abdominal end of the tube rests with its outspread fimbriæ upon its ovary. If, now, the fimbriated extremities from any of the already mentioned causes leave the ovary, then mucus, pus, blood, can easily flow into the abdominal cavity. That purulent mucus sometimes fills up the tubes, also extra puerperium—that it is just ready to overflow, and upon the slightest pressure does run out is confirmed by a case of mine: both tubes excessively tortuous; the torsions externally yellowish, nearer to the uterus grayish red to a dark brown color; the narrower half of the tubes marked with dark-colored longitudinal folds, the wider half containing an abundance of pus, which extends to the edge of the ostium abdominale. The mucous membrane of this portion is swollen and soft, its folds here and there raised into finely injected tufts.

The more tenacious the purulent mucus is, the less easily will it yield in a direction toward the uterine end upon pressure, unless the uterine end be abnormally widened. When, however, it may be asked, will its discharge through the opposite end of the tube cause an inflammation of the peritoneum?

1. When the pus is discharged in a considerable quantity.

2. When it is suddenly discharged into the abdominal cavity, as when from an abcess or from a perforation.

3. When pus has lost its laudable qualities, and has become decomposed. Then a very minute quantity is sufficient.

4. When the peritoneum is especially sensitive, the patient in a very debilitated state, and puerperal fever is prevalent in the neighborhood.

The pus of puerperal catarrh combines several of the above conditions; the blander and more mucus-like it is, as it generally is in the non-pregnant and non-puerperal state, the oftener it can escape harmlessly into the abdominal cavity and be entirely absorbed, especially when the peritoneum is thickened and accustomed to irritation. In the before-mentioned case there was, to be sure, under the influence of numerous abscesses in other parts of the body, a slight but general purulent covering upon the peritoneum.

Attention was first called to the connection between tubal pus and peritonitis by Cruveilhier,* again by Pellizari;† but the Florentine investigator procured his pus from a false source. The possibility that pus in an injurious quantity can be taken up from the cavity of the uterus, through the uterine tubal opening, has been previously denied by Martin, 1858,‡ although he was not yet cognizant of the sphincter tubæ and my injection experiment. To prove the opinion that tubal catarrh and salpingitis puerperarum cause peritonitis as soon as the tubal contents through pressure, etc., reach the abdominal cavity, he adduced the results of five post-mortem examinations; they were confirmed by six other reports by Klaproth,[*] from 17 lying-in women who died of puerperal fever; at the same time a seventh case came to notice which proved "that tubal inflammation occurs as a primary affection in lying-in women, though it may also originate in the non-pregnant condition." Buhl[†] found among 50 women who had died of puerperal fever, 19 times pus in the tubes—either unilateral or bilateral—and twice in the veins among 82 affected with purulent peritonitis.

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* Cruveilhier, Anatomie Pathologique, t. i. liv. xiii. p. 5.

† Union Médicale. 24 Juin, 1858.

‡ Monatsschr. f. Geburtskunde, Bd. xiii. S. 11.

Further confirmation came from Förster, who demonstrated this condition extra puerperium upon menstruating women, and traced back peritonitis tuberculosa to salpingitis tuberculosa for a cause. Buhl, who also knows of cases of menstrual salpingo-peritonitis,[‡] has already five years ago demonstrated the existence of inflammation transmitted from the uterus along the tubal mucous membrane to the peritoneum; but he lays stress upon the continuity of the tissue, not upon the infection which the mucus or pus poured out from the oviduct conveys to the peritoneum, and I, relying upon my examination, agree with him when he recently believes that both causes participate. In the right iliac fossa was seen a purulent tumor 2 inches long, 2 inches broad, 3 lines high, covered with false membranes, into which the external half of the right tube, which was stretched to a width of 4–6 lines with grayish-yellow, bad-smelling pus, opened. The tube was of a brown-red color, its mucous membrane softened; 4 cm. from the fimbriated extremity a round spot 5 mm. broad, ulcerated through to the peritoneum, and the latter destroyed at the centre of the ulcer.

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[*] The same, S. 161.

[†] Aerztl. bair. Intelligenzblatt. 1859, No. 14.

[‡] C. Hecker und L. Buhl, Klinik der Geburtskunde. Leipz. 1861, S. 234.

AN ADDRESS DELIVERED JANUARY 2d, 1873, AT THE FIRST MEETING OF THE ANNUAL SESSION OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

BY WILLIAM GOODELL, M.D.,
President of the Society.

GENTLEMEN: At the beginning of a new session and at the close of your president's term of office, it seems very appropriate for him to sum up the work of the society for the past year—to take, as it were, a count of stock, and to exhibit a balance-sheet to all the partners of this scientific enterprise. Hitherto this has not been done, and I shall, therefore, in addition give you a short sketch of the history of this society.

The want of an obstetrical society had long been felt by many of the leading physicians of this city, and there had been some talk of forming one. But it is mainly to the energy of the late Dr. George Pepper and to the zeal of our esteemed associate Dr. A. H. Smith that you are indebted for the creation of this society. After due consultation with their friends, these two gentlemen addressed a circular to a number of the profession, and invited them to meet on the 6th of June, 1868, at the office of Dr. A. H. Smith, then at No. 113 South Broad street. The names of those who responded to this call were: Lewis Rodman, Francis Gurney Smith, Jr., Elwood Wilson, Lewis D. Harlow, Thomas G. Morton, Robert

P. Harris, D. Murray Cheston, James F. Wilson, George Pepper, Albert H. Smith, and William Goodell. At this meeting a committee was appointed to draw up a constitution and to frame a set of by-laws. On the 19th of the same month, and at the same place, the second meeting was held. The number then present is not stated in the minute-book; but twenty-eight names appear on the roll as members of the society, which was on that evening formally organized. At that meeting Dr. Francis Gurney Smith, Jr., was chosen to be the first president, and Dr. George Pepper its first secretary.

Dr. F. G. Smith, Jr., was succeeded in office by Dr. Robert P. Harris, and I have the honor of being your third president.

Dr. George Pepper was annually reëlected to the Secretaryship, but, his failing health compelling him to resign, he was succeeded, in 1871, by our present efficient secretary, Dr. James V. Ingham.

Since the evening of the organization of this society the meetings have been held in the building of the College of Physicians. Since that time also, 39 members have been elected, as follows: 3 in 1868; 4 in 1869; 10 in 1870; 9 in 1871, and 13 in 1872. Of the 11 persons present at the first meeting, 1 was subsequently dropped for non-payment of dues, and 1 died. Of the 28 who organized the society, 2 have resigned, 2 have been dropped from the roll, and 2 have died. Of the 39 who have since been elected, 1 has resigned, 1 has died, and 2 did not recognize their election within the time specified by the constitution.

The number of resident members is now 56; of honorary members we have but one, and of corresponding members none. The average attendance at the meetings was in 1868 and 1869, 11; in 1870, 10; in 1871, 12, and last year, 16. For these interesting facts I am indebted to the kindness of your secretary.

As I look back upon the small beginning of this society and contrast it with its present condition, I cannot but congratulate you upon its success. From the outset this has been a working society. In no other in this city are the members so active and industrious; in no other do so many of the older members of the profession lend the weight of their presence, and the aid of their experience. At first we had to seek for associates; now a membership in our society is sought after by our professional brethren both at home and abroad. Our ranks are therefore steadily increasing in number. But, alas! death has also been busy in our small circle. During the past year two of our best known associates have passed from us. Of them it becomes my sad duty to give an obituary notice.

Dr. Augustine H. Fish, the youngest son of Benjamin and Maria Fish, was born in Trenton, N. J., in the year 1828. He received his early education at the classical school at Lawrenceville, and entered the Sophomore Class at Princeton College in 1845, from which he graduated in 1848. In the same year he matriculated at the Medical Department of the University of Pennsylvania, Dr. George B. Wood being his preceptor, and received the degree of doctor of medicine in the spring of 1851. The subject of his thesis was "Delirium Tremens."

Subsequently he spent a year and a half in the Philadelphia Hospital. In 1854, he married Sarah P., the second daughter of the late Rev. Dr. Cheeseman, and in the same year commenced the practice of his profession in Vine street, above Sixteenth, where he continued until his death, which took place on the 3d of August, 1872.

Early in his professional life he undertook the arduous labor of attending to one district of the Philadelphia Dispensary, and repeatedly during that time took charge of two, making over 6000 gratuitous visits every year. Later he became the attending physician to the Howard Home, and a most active and zealous member of the medical staff of the Charity Hospital. During the war of the rebellion, in addition to these responsible duties, he received the appointment of acting-assistant surgeon in the Saterlee U. S. General Hospital.

He early became a member of the Philadelphia County Medical Society, was for three years its assistant secretary, then one of its censors; afterward for many years its treasurer, and finally, in 1871, was elected to the honor of being one of its vice-presidents. He was also a member of the Pathological Society and of the College of Physicians. The library of the latter was his special delight, and he was hardly ever without some of its books. So fond of reading was he that, in addition to a very choice library of his own, he belonged to two library associations of general literature. To his great honor be it said, he was the originator of the "Medical Periodical Club of Philadelphia," which was the parent of all the present numerous journal associations of this city. This alone should make his memory dear to his professional brethren. So enthusiastic was he upon this useful work that even when his labors were so great that he never could avail himself of the advantages afforded by the Journal Association of the College of Physicians, he was a constant subscriber to it. Although terribly harassed by a most extensive and unremunerative practice, he always found the time to keep up with the literature of the day.

The high tone he took on matters regarding the honor of the profession was so well known to his professional brethren, he was often called in to decide delicate questions of ethics. No man was more kind and assiduous in his attentions to the poor; he indeed made himself almost their slave, in spite of the earnest remonstrances of his friends. When yet struggling to attain a competence, he happened one day to be in attendance upon a gratuitous case of confinement. While thus occupied, he was twice summoned—the last time with the threat of dismissal—to attend one of his few wealthy patients, also in labor. He nobly refused to leave the bedside of the poor woman, and thus lost a good fee, and, what was worse, his attendance upon a family to which he sent his heaviest bills.

His obstetric practice was very large indeed; he averaged 130 cases of labor each year, and attended 157 cases during the year 1871, besides being called in to help other physicians in their cases; for he was extremely successful in all obstetric manipulations, made frequent use of the forceps, and, from the very small size of his hand, could perform version long before his equals in skill. His death is attributed by his friends to the fatigue and loss of rest consequent on his large obstetric practice and consultation cases.

He early became a member of our own society, and, although he rarely spoke at its meetings, took the liveliest interest in its proceedings. But, however reticent in public, he was a most affable and generous host. Some of us will not soon forget the pleasant gatherings under his roof and around his hospitable table. Later in the spring, without any premonition or predisposition, he was seized by the disease (phthisis) which ended his life. During his brief illness he made a profession of his faith in Christ, received the rite of baptism, and passed away with words of love and faith upon his lips. He died at a hotel in Cooperstown, N. Y., where he had been carried for his health.

The other associate whose death we mourn was the beloved Dr. George Pepper. He was born in Philadelphia on the 1st of April, 1841, and in the same city was wholly educated. Entering the Collegiate Department of the University of Pennsylvania in September, 1858, he graduated in July, 1862. He at once began the study of medicine in the office of his father, the late Prof. William Pepper, M.D., of the University of Pennsylvania, one of the most distinguished physicians of his day; but, like many of our patriotic youth, he abandoned it to enter the army. On the 15th of the following September he enlisted as a private in the Sixth Pennsylvania Cavalry, better known as Rush's Lancers. His abilities, however, being soon recognized, he was shortly afterward promoted to a lieutenancy. He passed through many of the hardships and dangers of war, and was under fire at the terrible battle of Fredericksburg. In spite of the suffering and privation incident to that campaign, the out-door life proved of great benefit to him. His health, previously shattered by a sharp attack of pleurisy, and by a desperate illness from acute nephritis, became so robust that it was his purpose to serve his country until the rebellion was quelled. But in the following spring, while on a scouting party, his left clavicle was badly dislocated by a fall with his horse on the ice. This accident disabled him from active service, and on the 22d May, 1863, he received an honorable discharge.

Upon his return home, he at once resumed the study of his profession; entered the Medical Department of the University of Pennsylvania in October, 1863; received his diploma in March, 1865, and, on the 29th of the same month, married a daughter of the late George M. Wharton, Esq., a leading member of the Philadelphia bar. Soon after this he obtained a district from the Philadelphia Dispensary, and, during his term of service, faithfully discharged its onerous duties. Taking a great interest in the higher studies of his profession, he early became a member of the Pathological Society; for some time held the office of its treasurer, and contributed numerous short papers to its proceedings. While yet a mere youth, he gained an election to the College of Physicians and to the Academy of Natural Sciences. Apart from a membership in these active societies, he was made a corresponding member of the Gynæcological Society of Boston, and was honored by several official positions.

For several years he was the sole physician to the

Magdalen Home. As one of the assistant physicians to the Nurses' Home, he gained great experience as well as reputation in obstetric manipulations. At this institution he gave clinical instruction on the diseases of women to large private classes. He also delivered a course of didactic lectures on the same subject at the Jayne Street Medical Institute. In addition, as the assistant of Dr. J. Forsyth Meigs, at the Pennsylvania Hospital, he took elaborate notes of every interesting case, and contributed to the Hospital Reports for 1868 an admirable paper upon a case of retroversion of the womb, complicated by a large fibroid. A few months before his health began to fail he won, after an exciting contest, an election to the Philadelphia Hospital as one of its accoucheurs. Those of us who knew him well, will recall the joy he expressed in gaining so coveted a position on the staff of this magnificent hospital. What diagrams were drawn by his skilful pencil, what elaborate lectures he had written out, and what earnest plans he had laid for imparting clinical instruction to the students who throng its wards! Little did he or we think that this was not to be.

His life, spent in obtaining and in imparting knowledge, was a busy one; but it had its reward. Few physicians have ever acquired so remunerative a practice in so short a time. By common consent he was conceded to be the rising obstetrician of this city; and deservedly, for no one had prepared himself so thoroughly in that branch of the healing art. No one in this city had collected so complete a set of obstetrical instruments and of those for the surgical diseases of women.

In the spring of 1871, he was laid low by a lingering attack of typhoid fever. From this he convalesced so slowly that he was sent to spend the summer at the family country-seat in Chestnut Hill. Thanks to the unremitting care of his brother, Dr. William Pepper, to whom he was warmly attached, he was so far restored to health as to resume his practice in the autumn. Three months later, on the 12th of November, he was seized with an extremely severe influenza, followed in a few days by an inflammation of the left lung. His sickness was lingering and marked by many alternations of condition. Early in May, he was again moved to Chestnut Hill. where, after an illness of ten months, he died on the 14th, of September, 1872. Thus, in the first flush of manhood, at the early age of 31, passed away our greatly beloved friend and associate, leaving a wife and two children to mourn his loss. He was buried in Laurel Hill Cemetery, and at his funeral this society was largely represented.

In an annual address, more can scarcely be given than a mere sketch of the life of a departed member; but Dr. George Pepper was so identified with the history of this society, and withal so highly esteemed, that I need not ask your indulgence for a little more than the customary obituary notice.

Early attaching himself to obstetrics and to the diseases of women, he sought in every way to perfect himself in those branches. His name appears on the honorable roll of the founders of this society; but he was more than that—he was one of its prime originators. As such his memory should be cherished by us. Upon the night of its organization he was chosen to be its first secretary. To this office he was annually reëlected until his protracted illness compelled him to resign. How rarely absent he was from his post; how pleasantly and efficiently he performed its duties; how lively an interest he took in the welfare of this society, and how often and how ably he participated in its debates, all are still fresh in your memory. To our Transactions he contributed two valuable papers—the one "Adipose Deposits in the Omentum and Abdominal Walls as a Source of Error in Diagnosis," the other on "The Mechanical Treatment of Uterine Displacements." His numerous remarks and observations there recorded bear witness to the wide range of his information, and the keen interest he took in this chosen branch of his profession. By his death we have lost our most active member and our staunchest supporter.

His great artistic talent, his mechanical ingenuity, his singularly retentive memory, his industry and enthusiasm in the pursuit of knowledge, gave promise of the highest attainments. No young physician had a more certain future before him. His practice was rapidly growing; his reputation as a teacher increasing; his skill and counsel were beginning to be sought after by his professional brethren, when an inscrutable Providence cut short this brilliant career.

While greatly admiring the intellectual qualities which he possessed in so high a degree, I love still more to think of the qualities of his heart. The charming simplicity and guilelessness of his character, his genial hospitality, his warm affections and abiding friendships, endeared him to a very large circle of friends. During his last illness, the love with which he was regarded sought expression in numberless gifts and constantly repeated delicate attentions. No sick-chamber was ever so lavishly decked with flowers; no bedside so surrounded by every device that art could contrive or money purchase, for the comfort and cheer of an invalid. It was in a meeting of the College of Physicians that I first met George Pepper. His tall figure, handsome face, highly intellectual countenance, and gentlemanly bearing immediately attracted my attention, and I at once sought an introduction. But it was in this hall that I first learned to know him and to love him. A common interest in the welfare of this society, the transaction of its business, like pursuits and congenial tastes threw us much together, and this acquaintance, despite the disparity of our ages, soon ripened into a warm friendship.

His death I feel keenly; we all shall sadly miss him—very sadly indeed. But this grief is not ours alone; there are others to whom his death brings far more bitter pangs. It is not for us to violate the sanctity of home-griefs; but I may say that no husband was more devoted, no father more kind, no son more affectionate, no brother more beloved than our departed friend. Few men loved his kindred so warmly and so unselfishly; no one was in return more loved.

It was my privilege to see much of him during the long and weary days of his illness, and many a time did he ask after the welfare of this society, and after its members by name. His sufferings were great, his frame reduced to a most pitiable condition of emaciation and weakness. When it was day, he longed for the night, and when it was night, he longed for the day; but words of impatience, words of complaint, I never heard pass from his lips. When it was but too evident that the last enemy was approaching, he calmly arranged his affairs, gathered up his strength for a last farewell, and died in the abiding faith of a Christian, and in the hope of a glorious resurrection.

O vita, stulto longa, sapienti brevis!

From this sad tribute to the memory of our deceased associates, let me pass to a review of the year's work of the society. As regards the original papers read, the observations communicated, and the morbid specimens presented to it, you will agree with me that, while the first have been too few, its transactions in the aggregate show good work, and a yearly increase in bulk and value. That much has been done by you worthy of permanent record, is attested by the abstracts taken from your proceedings, and the quotations *in extenso* of your discussions, which are constantly appearing in the medical periodicals of this and other lands. For the collection of material for these Transactions, and for their careful preparation for publication, you owe much to the late Dr. George Pepper, to your present active secretary, and to the publication committee, who have all worked faithfully to this end. Let me here pay a passing quittance of thanks to Dr. B. F. Dawson, of New-York, for his unfailing courtesy in all matters relating to the publication of our Transactions in the columns of his magazine, *The American Journal of Obstetrics and Diseases of Women and Children.*

Of the few papers read before you, there was one of great merit by Dr. J. S. Parry, advocating the Cæsarian section whenever the conjugate diameter is under two and a half inches. This valuable contribution has not yet been published, nor will it be until the author has collected from all parts of this land the data necessary to sustain his thesis. The bold and original views enunciated in this paper startled some of us; but perhaps, in this matter as well as in others, we have been too servilely following the traditions of the elders. From my pen you had an historical paper upon some ancient methods of delivery. These, gentlemen, I am sorry to say, comprise the only papers read before you; but, on the other hand, there were several admirably reported cases and carefully digested discussions.

One discussion on a case of extra-uterine fœtation will, I believe, throw light upon the diagnosis and treatment of this obscure and fatal accident of conception. In it were shown: first, the very striking resemblance of the symptoms to those of a retroversion of the gravid womb; so striking, indeed, that several members had attempted, in the cases which they had seen, a reposition of the presumedly displaced organ. Secondly, that the expelled decidual cast of the womb had frequently been mistaken for the blighted ovum of an abortion; and thirdly, that the paroxysms of pelvic pain, so common an accompaniment of this *error loci*, had been taken for attacks of localized peritonitis. The destruction of the ovum, in two undoubted cases, by electricity, not only casts great credit upon the skill and ingenuity of Dr. J. G. Allen, but also gives promise of a larger measure of success in the treatment of this opprobrium of our profession. An interesting case of vesicular mole started up a discussion in which was given a *résumé* of the latest views of pathologists in regard to the nature of this curious form of degeneration.

Perhaps the most important of all the discussions was the one on the early use of the forceps, the method of application and the mode of traction. This was continued for several meetings by quite a large number of the members, of whom very few gave the secretary abstracts of their remarks. This I regret, because the scope of an instrument so valuable to mother and child deserves to be accurately defined, and what better way to determine this can there be found than by sifting the arguments evoked by the freedom of debate? Although widely divergent views were set forth, and pet theories sustained by the disputants, this discussion was carried on with the utmost harmony. If one of the active participants can be trusted to make an impartial summary, the various arguments advanced at those meetings may, I think, be narrowed down to the following propositions: that the earlier the application of the forceps the better will it be for mother and child; that when the Hodge or other compressing forceps is used, the blades should be applied to the sides of the child's head; that when the German or other non-compressing forceps is resorted to, the blades should be applied with relation to the curve of the pelvic axis rather than to any special diameter of the child's head.

In the presentation of morbid specimens and in the relation of cases, the past session has been unusually rich. Dr. J. S. Parry laid before you a specimen of primary cancer of the vagina, a disease so infrequent that this case is the second one only which has been brought to your attention. The same gentleman exhibited a cancer of the fundus uteri, and also related a case in which he had removed the cervix uteri similarly diseased. Through the courtesy of Dr. C. W. Perkins, since elected a member, you were afforded the rare opportunity of seeing a remarkable specimen of ventral pregnancy. Dr. William B. Atkinson kindly permitted me to show you a womb which, although containing a mural fibroid as large as a fully developed fœtus, had yet carried a child up to term.

Dr. R. G. Curtin presented a vesicular mole, and also an ovarian cyst, which he had removed by the short incision. Each specimen was accompanied by a very interesting clinical history; but I refer to that of the latter more especially, because it is the first and only case of ovariotomy reported to this society. Thus far Dr. Curtin holds the honor undisputed; but, judging from the enthusiasm with which some of you are working up the science of gynæcology, I am sure that it will soon be shared by others.

Dr. J. L. Ludlow brought us an ovarian cyst which had been removed after death, and which had not attained a sufficient size to be recognized during life. Very instructive specimens of perimetritis, shown by Drs. A. H. Smith and William F. Jenks, led to interesting remarks upon the effect of this disease in producing unyielding displacements of the womb. A noteworthy feature in these specimens was the condition of retroflexion in each womb, and the fact, also in each, that an ovary was glued, like a sub-peritoneal fibroid, to the posterior wall. In this relation, let me modestly advert to a case related by myself of adherent placenta and pelvic abscess in a cow. Dr. J. H. Packard exhibited a uterine polypus which he had removed shortly after the delivery of one of his patients. This started up a discussion upon the propriety of removing these growths from the gravid womb, the sense of the members being to let them alone, unless the hemorrhage or their size was great. A cystic tumor of the labium majus, removed by the same gentleman, brought up several of you on your feet. From the remarks that ensued it was elicited that, from its apparent disappearance upon pressure, and from the impulse communicated to it by the act of coughing, this kind of tumor had at first been invariably mistaken for a hernia. Dr. Wharton Sinkler reported a case of abortion and showed us the gritty placenta detached by a blood-clot. At our last meeting, you had from Dr. J. V. Ingham the ovum and uterus of a woman who sank rapidly after an abortion in the sixth month of utero-gestation. This most valuable specimen not only showed very clearly a fatty degeneration of the placenta and membranes; but it conclusively proved the hypertrophic elongation of the cervix in pregnancy.

Through the able management of the treasurer, Dr. D. Murray Cheston, the finances are in a prosperous condition. His long-continued illness deprives us, this evening, of the pleasure of listening to his annual report. I shall, therefore, briefly state that a reserve fund of $300 is prudently invested, and that our income exceeds our expenses by nearly one half. At the instance of your council, you wisely decided at your last meeting to raise the annual tax to three dollars, and to devote the surplus funds to the construction of a cabinet for the collection of instruments, and to the creation of a museum for the preservation of specimens. Let me congratulate you upon this important decision. Great events start from small beginnings; and this timely act may produce results such as shall not only reflect honor upon us, the founders, but benefit others who in coming time will fill our places and know us only by name.

To another act of this society I advert with very great pleasure. For four years you declined to elect honorary and corresponding members. It was your wish not to confer these titles until the society had gained such a position as would make them coveted. Within the past year so numerous have been the requests for membership from non-resident and foreign physicians, that at your last meeting you decided that the time had come to change this modest policy. By prescriptive rules, honorary members should not be residents. But, by a unanimous vote, you resolved to waive for once all precedent in order to do homage to the fame and genius of one great man, whom age and blindness prevent from presiding at your meetings. By electing the venerable and distinguished Hugh L. Hodge to be its first honorary member, the Obstetrical Society of Philadelphia has received far more honor than it has conferred. After making this good beginning, you appointed two committees: the one to design a seal and diploma; the other to present for membership the names of men distinguished for their attainments in branches of knowledge belonging to the province of this society.

From these proofs of the industry and prosperity of the society, I turn now to matters affecting its welfare. From the outlook which a presiding officer gains, he often sees shortcomings which escape the notice of others. Permit me, therefore, to pass from words of praise and cheer to a few suggestions for the better working of this society. Its thrift I have so much at heart that no excuse need be offered for this liberty.

In the first place, then, we have no short-hand reporter to take down our debates, and they are, therefore, imperfectly reported. To remedy this defect, and to relieve our efficient and hard-worked secretary from much of the drudgery of his clerical labors, I would urge it upon the members to furnish him with abstracts of their remarks, and that as soon as possible after they have been made. Otherwise, the close attention which he is compelled to pay to the merely mechanical labor of writing necessarily debars him from taking an active part in our discussions. The duties of a secretary are sufficiently onerous without adding to them those of a reporter.

May I call attention also to the fact that while the character of our debates has been well sustained, the number of the participants is limited? Due notice of the evening's discussion is given, and yet few members come prepared to take an active part in it. This is not as it should be. Debate is the very life of a society such as ours; it is the collision between the flint and steel that begets the spark; it is fermentation that works off and deposits impurities. Further, too many of the members are reticent, and their interest must necessarily flag. All should strive to do something for the common good. No matter how young or inexperienced a member may be, he can often report some carefully observed case or ask a question on some doubtful point. Our meetings should be of such a character as to permit its members freely to ask information from one another. We come here not to criticise, but to learn, and we can best learn by teaching one another.

Bear with me while I touch upon another matter, and believe me that I do so with great reluctance. I have, however, chosen the prosperity of our common society as my text, and this must be my excuse. In all well-ordered societies certain customary formalities are rigidly adhered to. It is the pomp and circumstance of an army that preserves its *esprit de corps*. It is the vesture of authority that gives majesty to authority. By neglecting certain necessary, although seemingly trivial accessories, we are in danger of losing our vitality. For example: the night of our annual election is—so to speak—a *dies non*. Instead of that meeting being the best-attended one of the season, barely is a quorum present. As a remedy to this, I would diffidently suggest the observance of some degree of ceremony both in retiring the out-going president from the chair, and in inducting the president-elect into it. It appears to me very appropriate that the one should deliver an annual address as his final official act, and that his successor, upon taking office, should give a short inaugural. An election to the chief office in the gift of a society certainly merits the thanks of the successful candidate; while nothing so quickens the zeal of the members as a summary of its half-forgotten year's work. Hitherto this has not been done, and for a very good reason. By your constitution your president holds office for but a single year; after which he becomes a candidate for reëlection. To the natural delicacy of every right-thinking man this rule offers but one of two choices; either that of his staying away on the night of the annual election, or that of his declining to run as a candidate for reëlection. Out of this embarrassment I see no escape, unless you rescind this rule and make the term of office expire by limitation. This or some other relevant change in your Constitution I earnestly offer to your consideration.

One more suggestion and I have done: the mission of such a society as ours is without end and without limit. Apart from educating its members, it ought to educate the masses. By giving the best to the most it will become in the land a power for good. There are social problems of the day which we ought to confront. Perhaps the time has not yet come for us to grapple with all; but one there is which urges itself upon our attention. During the heated term of the past summer hundreds of homes were made desolate. The acres of God that belt this great city were furrowed with thousands of nameless little graves. So appalling was this calamity that patriots and philanthropists joined hands in giving to the children of the poor the means of breathing pure country air. Thanks to these free excursions, many lives were saved. But more than this was needed. Had the public been acquainted with a few simple laws regulating the health and the diet of children, this terrible scourge would have been averted. Why should not this Society step in to supply this information to the masses? What better proof could it give of its intrinsic worth and of its public-spiritedness than by defending the fireside and by aiding the State? In view of these arguments, which must appeal to the good sense of my hearers, I urge upon you the timely appointment of a committee to draft some simple rules for the better rearing of children, to put them into a cheap pamphlet-form, and to distribute them gratuitously to all the dispensaries of this city early in the coming spring. In giving them a wide circulation you would have the hearty coöperation of all the daily and weekly newspapers; while the expense incurred would be more than compensated by the good attained and by the lasting gratitude of the community.

The hour has now come for me to yield up the office which I have held for the past year; but it would ill-become me to leave this chair without thanking the Secretary for his friendly promptings, and you for your kind support and forbearance.

Gentlemen, the future of this society rests with us. May its prosperity ever be our watchword and our bond of brotherhood! Working in the spirit of truth and with a singleness of purpose, we cannot but attain success—that success which is born of unity and of resolve.

THE TREATMENT OF WHOOPING-COUGH WITH QUININE.

By B. F. DAWSON, M.D.,
Clinical Lecturer on the Diseases of Children in the Medical Department of the University of New-York;
Physician for Children to the Demilt Dispensary; to the New-York Free Dispensary for
Sick Children, etc.

I AM well aware that every therapeutical assertion, especially concerning pertussis, is to be accepted with the utmost caution, and that value can be placed upon such only as have been well tried and are based upon careful clinical study.

I deem it, however, the duty of every physician, after having carefully observed the value of any one therapeutical agent in the cure of some one disease, to make the same known to the profession, whereby its real value may be proven or its worthlessness exposed.

In advocating the use of quinine in pertussis, I am fortunate in being able to support my own experience with that of one whose name is well known on both continents, and whose contributions to the progress of medical science are always received as the teachings of one speaking with authority. I refer to Professor Binz, of the University of Bonn, Germany.

In 1870, a paper on "The Use of Quinine in the Diseases of Children" was contributed by him to this journal, (Vol. III. No. 1, May, 1870,) in which he advocated the use of quinine in pertussis, and stated that in his hands it had accomplished valuable results. Considering pertussis to be a neurosis of the pneumogastric nerve, caused by infectious and irritating mucus that has accumulated in the larynx and pharynx, and having found by experiments that quinine destroyed, even when highly diluted, all structures found in normal mucus, he supposed, without taking into consideration the more intimate morphological connection, that the mucus of pertussis also would be affected in a similar manner by quinine.

In this he was not disappointed, the trial equalling his expectations.

In the clinic for children's diseases which he held in Bonn, he says: "I have treated for the past two years all the cases of pertussis, without any exception, with quinine. The best proofs of its good effects is seen in the fact that those in charge of the little patients repeatedly call again for the 'bitter medicine' whenever they have succeeded, either by coaxing or force, in administering it to them. There was a most striking difference to be seen in those whom it was impossible by any means to induce to swallow the solution of quinine. In these cases the whooping-cough assumed its regular obstinate course; in the others, although living in all other respects under perfectly similar circumstances, the paroxysms were always reduced in frequency and severity!"* These good results with quinine, he stated, could only be obtained by strictly observing the following conditions: "*It should be given in solution; the dose should not be too small, and should not be administered in a vehicle that will prevent it from coming in contact with the mucous membrane in its passage through the pharynx;*" and the neglect of one or all of these rules he considers the reason why other observers have seen no positive results from the use of this drug. Certainly it is not just to condemn a remedy as ineffectual when it is not employed in the proper manner.

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* American Journal of Obstetrics and Diseases of Women and Children, vol. iii. No. 1, page 8.

The assumption that pertussis is a specific local catarrh, caused by a fixed contagion admitted from without, Professor Binz thinks, admits of being hypothetically explained by the fact of adults being almost unexceptionally exempt from it. "The stronger development of the epithelium may be regarded as a protection against the affection of the mucous membrane. This greater development in children probably takes place quicker if those parts of the throat, from pertussis, have been in a hyperæmic condition for weeks, and thus it is easy to comprehend how the immunity originates after the affection has once been surmounted."*

Still another cause of pertussis has been advanced. Dr. Letzerich, of Germany,† in 1871, asserted in a paper on the subject that he had discovered a form of fungoid growth which vegetates in the epithelium of the air-passages, and by its irritation causes the convulsive attacks of coughing. The expectorated mucus in patients suffering from pertussis, he says, contains masses of brownish-red spores, with occasional threads of mycelium, which in the latter stages of the disease becomes very abundant. These observations were made by experiments upon rabbits into whose tracheæ he introduced the fungus; in a short time the latter became affected with a noisy and violent cough—in fact, a genuine whooping-cough. The rabbits thus affected were killed and examined, and their air-passages were found to contain the same fungus as that found in the sputa of human subjects; in fact, the mucus presented precisely the same appearance.

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* Loc. cit. pages 9, 10, foot-notes.

† Quarterly Journal Medical Science and American Journal of Obstetrics, vol. iv. p. 761.

This fungus theory is certainly a very plausible and possible one, and one that even seems to be proven by the effects of therapeutical measures directed against the development of the fungus.

The fact that narcotic remedies do sometimes greatly influence whooping-cough does not, however, weaken this latter theory, for by their use the sensitiveness of the pneumogastric nerve, and of the whole nervous system, is so benumbed as to but feebly appreciate or respond to the irritation in the larynx and pharynx.

Quinine, it is well known, has a powerfully destructive effect on true fungi and fungus germs—hence its great power over septic or zymotic affections; and why should it not influence the growth of the fungus of pertussis?

This theory of Dr. Letzerich tends to strengthen our belief in the appropriateness of Professor Binz's treatment; for if the fungus theory is the correct one, then quinine with its destructive effects on fungoid matter may certainly be considered a most appropriate remedy.

Another advocate of the use of quinine in pertussis, a short time after Prof. Binz's views had been made public, was Dr. Breidenbach, who published a paper (noticed in *The Practitioner*, Feb. 1871, London) on the efficacy of the hydrochlorate of quinine in a violent epidemic of 1870. In all pure cases he states its effects were really surprising, as soon as he had from precise observations determined the proper dose and mode of administration, in which latter point he thinks lies a great part of his success. The amount administered by him, the age of the subjects varying from three weeks to eight years, and the violence of the attacks being very different in different cases, varied from 1½ to 15½ grains. No other remedy than quinine was employed, and some of the children were freely exposed by poverty to the injurious effects of the weather. In the worst cases, he says, after the use of the remedy for forty-eight hours, the frequency and violence of the attacks diminished.

With such strong testimony in favor of the quinine-treatment of pertussis, it is somewhat surprising that nothing, or very little, has been done in this country to test its value. Even in our text-books on diseases of children nothing is said in reference to the use of quinine in whooping-cough, and in such recent works as the last editions of Lewis Smith's and Meigs & Pepper's books, the omission still continues, notwithstanding that the articles already referred to appeared in 1870–1 in an American journal, the only one devoted to diseases of children published in the English language. We can but trust that in the future editions the subject will receive proper attention.

Having opportunities for testing the value of any thing new in infantile therapeutics, I determined, after having read Professor Binz's paper, to apply his treatment in all cases of whooping-cough coming under my care, at the two dispensaries with which I am connected, as well as in my private practice.

I did not have long to wait. On December 4th, 1871, the first case came to my class at the "Free Dispensary for Sick Children;" the record of it and a few others being as follows:

CASE I. Annie C——, 4 years. First whooped three nights ago; since then five or six times a day; is worse at night, paroxysms very soon ending in vomiting; ordered solution of the sulphate quinine of fifteen grains to the ounce of water, a tea-spoonful to be given every two hours. No other treatment. To return on 6th.

Dec. 6th.—Mother states that she vomited the first dose, which was given at 1 P.M., and considerable thick phlegm. Had no whoop until just before giving the evening dose at 7; also once at night. The paroxysms were not so severe. She whooped once at 9 this A.M., but much softer, without any nausea. Ordered half a tea-spoonful of the quinine solution in one of water every two hours, and to return on the 8th.

Dec. 8th.—Child greatly improved in appearance. Mother states that she has whooped but once since the 6th, and that was on the same evening. Ordered to continue medicine and return on the 10th.

Dec. 10th.—Has not whooped since 6th. Ordered to continue the quinine in same manner, but only three times daily for one week. To return if she whoops again. This she did not do; so she was registered as cured.

CASE II. Margt. M——, 7 years. Brought to the same institution Dec. 18th, 1871. First whooped five nights ago, (Dec. 11th;) since then has grown worse, and now whoops almost every hour. Had an attack while in the dispensary, which was very severe and was followed by vomiting. Ordered solution of the sulphate of quinine, ten grains to the ounce of water, a tea-spoonful every two hours daily. To return Dec. 20th.

Dec. 20th.—Vomited first and second doses, with it considerable stringy sputa, more than in previous attacks; a slight whoop occurring each time. Since then has whooped but twice during yesterday, once during the night, and on rising this A.M. Attacks not so severe. Medicine ordered to be continued.

Dec. 24th.—Child has whooped but once daily in the evening since 20th. Continue treatment.

Dec. 28th.—Has not whooped for two days. Continue treatment for one week.

Jan. 5th.—No return of whoop. Discharged cured.

CASE III. Bernard W——, 22 months. Healthy child. Brought to the Demilt Dispensary Dec. 20th, 1871. Whooped first on the previous evening, since then two or three times. Ordered quinine in solution, five grains to the ounce, a tea-spoonful every hour.

Dec. 24th.—Child whooped but twice since taking the quinine on the same night, Dec. 20th, and vomited the first three doses; with them considerable tough sputa. Continue treatment.

Dec. 28th.—No return of the whooping since the night of the 20th. Discharged cured.

CASE IV. Albert F——, 10 years. Was brought to my office by his father Jan. 3d, 1872; he having whooped twice during the preceding night. Ordered quin. sulph., ten grains to the ounce, a tea-spoonful every hour. To call in two days.

Jan. 6th.—Whooped once very slightly in the night of the 3d. Not once since. First dose nauseated; coughed up considerable thick phlegm after first few doses. Ordered to continue the quinine for one week. No whooping occurred during that period.

Case V. George F——, 4 years. Brought to the Demilt Dispensary Jan. 11th, 1872; having had the whooping-cough for the past two weeks. Paroxysms occur several times daily, and so frequent at night as to keep all awake. Vomits frequently, and shows markedly the effects of the disease. Ordered sol. quinine, ten grains to the ounce, a tea-spoonful every hour during the day, and at night when awake.

Jan. 13th.—Much improved, the paroxysms not lasting so long or being so severe; ending at first in coughing up thick phlegm, but not so much now. Had three attacks during the night. Continue treatment.

Jan. 17th.—Has greatly improved; has not whooped for two days until this morning, when his mother thought he did. Ordered to continue the quinine.

Jan. 23d. Has not whooped since last visit. Is "wonderfully well," as the mother expressed it. Was not again seen.

Case VI. George W——, 3 years. Came under my care Feb. 24th, 1872. Had two whooping attacks during preceding night, and once on the morning of visit. Is in good health otherwise. Ordered quinine, ten grains to the ounce of water, a tea-spoonful every hour.

Feb. 26th. Whooped twice on the 24th, and once yesterday noon, though not so severely, and easily coughed up thick mucus. Last night had but one severe attack of coughing, but did not whoop.

Feb. 28th. Whooped once very slightly night before last; none since.

Feb. 30th. Has not whooped since last visit.

Mar. 3d. Has not whooped since the 28th. Ordered to discontinue the quinine, and to be brought to me should the whooping return. The child was not again seen, and I subsequently learned that the whooping did not return.

The above six cases have been selected out of sixteen cases of pertussis seen by me during the past year, in which quinine was the only remedy used; the remaining ten presenting similar histories. Out of the sixteen cases, the shortest cure was effected in one day and the longest in twelve days. In but two cases have I been disappointed in the efficacy of the quinine. They were two dispensary cases; and from the fact that one, a little girl, was under the care of her father, and the other was a "farmed-out" infant of twelve months, I am inclined to attribute the failure to the negligence of those in charge of them, the quinine not being given to them as frequently as ordered. In both these cases, however, there was some palliation of the paroxysms.

In regard to the administration of so disagreeable a remedy, I found that, though frequently there was some difficulty in getting the children to take it, yet it was exceptional for them to resist after the first two or three doses, and in only a very few did it cause vomiting. The direction to give the children a piece of an orange or a little sugar five or six minutes after taking the quinine doubtless had considerable to do with their seeming willingness to take the "bitter medicine."

As to how the quinine so very remarkably influences this most troublesome and severe disease several theories might be advanced. If the fungus theory of Dr. Letzerich be the correct explanation of pertussis, then we can readily account for its efficacy, in the already mentioned fact of its destructive influence on fungoid development, and consequently its power consists in removing the cause of local irritation, which gives rise to the reflex phenomena evidenced in the whooping.

The above theory and explanation carries with it considerable weight, and, it appears to me, should be accepted until disproved, or a more convincing pathological explanation of pertussis is given.

For my own part, I accept it, and in consequence consider pertussis an affection of the mucous membrane of the pharynx and larynx, and the "whooping" as simply reflex. And the fact that almost all remedies given for other than their local effects, have either signally failed or but partially succeeded, strengthens this hypothesis.

Nevertheless, I do not attribute the rapid cure effected by quinine to the simple destruction of the fungus, but also to its nauseating bitter taste. In every case of pertussis, it will be conceded by all, there is an abnormal secretion of a thick tenacious mucus from the mucous membrane of the pharynx, (whether this secretion is due to simple catarrhal or reflex hyperæmia, or to fungoid development, it matters not,) which may or may not excite a paroxysm of whooping, but which certainly aggravates and prolongs the latter, as may be proved by the fact that the paroxysms invariably cease the moment this mucus is removed either by the coughing, vomiting, or the finger. Now, the effect of a small amount of a solution of quinine, when taken into the mouth and swallowed, is instantly, from its bitter and nauseating taste, to excite a free secretion of thin mucus from the buccal mucous membrane and the salivary glands, and this softens and renders easy of dislodgment the tenacious mucus referred to. The frequent repetition of the quinine, therefore, keeps up this free secretion, and thus prevents the mucus from becoming tenacious and difficult of dislodgment. At each act of coughing, therefore, the accumulated mucus is readily loosened and expectorated, and unobstructed inspiration obtained. The rapid loosening of the cough, the briefness of the attacks in comparison with those previous to the administration of the quinine, and the easy expectoration, certainly tend to favor the correctness of the above theory.

The failure of quinine against pertussis, in the hands of others who have tried it, is undoubtedly to be attributed to the manner of its administration—either in large doses at long intervals, or in the form of pills; in either case, therefore, the local effects upon which I place the greatest value are not obtained. While writing this paper, a friend, whose practice is largely amongst children, informed me that he met with no success with quinine in pertussis; but on his informing me that he had always given it in large doses, morning and evening, I attributed his failure to that fact.

The object with which I have written this paper is to call the attention of the profession to this treatment of pertussis, and invite them to give it a careful trial, feeling convinced that if the following rules are carefully observed, few if any will be disappointed in their results.

1. Give the quinine (sulphate or hydrochlorate) dissolved by acid in pure water only. For children under 3 years, from gr. v. to gr. viij., and for older children and adults, from gr. x. to xij. to the ounce.
2. Give not less than a tea-spoonful *every single* or, at the longest, every two hours during the day, and whenever cough comes on in the night.
3. Give nothing afterward for some minutes to destroy the taste or to wash out the mouth.
4. Continue giving it notwithstanding the first doses may be vomited.
5. Be sure that the quinine is pure and thoroughly dissolved.

ON COMBINED EXTERNAL AND INTERNAL VERSION.

By J. BRAXTON HICKS, M.D.,

Physician Accoucheur, and Lecturer on Midwifery and the Diseases of Women, at Guy's Hospital, London; President of the Obstetrical Society of London.

(A letter to Prof. Fordyce Barker, of New-York.)

DEAR DR. FORDYCE BARKER: I see in a reprint of a paper by Dr. W. S. Richardson, read before the Massachusetts Medical Society, that he claims for Dr. Wright the credit of the plan of version by the combined external and internal method, which I brought before the notice of the profession. I had not at the time the original paper of Dr. Wright, which was published in the transactions of Ohio State Medical Society, read June 6th, 1854; but have since received a copy of the transactions which includes it. As one of the Honorary Fellows of the Obstetrical Society, I have taken the liberty of sending you a few remarks; which I should feel obliged if you would read over, and should you feel you can agree with them, perhaps you would kindly take some early opportunity of attracting attention to them, either generally or in the State in which Dr. Richardson read his paper.

In essence, Dr. W. S. Richardson says that Dr. Wright had described in 1854 the plan which I set forth in the *Lancet* in 1860, and then he calls the plan "Dr. Wright's Method." On reading over Dr. Wright's original paper, I was not surprised to find that between Dr. Wright's and my plan of turning there was just the difference that obtained between the old cephalic version plan, and that which I had suggested, and it is evident by comparing typical cases of each, which I insert below, that Dr. Wright only used the internal hand, not even mentioning the use of the *external one*. Now the distinctive point of the plan I have introduced was just this, that *both hands are used together*, one supplementing the other, so that when the internal hand began to lose power the external hand would begin to gain power, and *vice versá*.

This principle was applied by me to both partial and complete version, and it is (as far as I have been able to discover) a curious fact that in the practice of neither German nor other obstetricians has the use of the two hands simultaneously been described. The only use of the outside hand has been hitherto to steady the uterus to prevent recession. This character it is which Dr. Richardson has overlooked, and it is for this that I am desirous of claiming for *myself* whatever of originality it possesses. I may add that, before my description, no author had described *complete* podalic version, without passing the hand internally, with both hands, in such a manner that we might choose which pole of the fœtus should cause to present. Wigand, in transverse presentation, was only able to bring down that pole which was nearest to the os uteri. My plan permits us to elect.

These remarks I make not to the disparagement of Dr. Wright's plan; on the contrary, I consider it is excellent as far as it goes, and the principle of pushing the child along the curve of the inner wall of uterus is well grounded.

This principle was shown by Dr. R. Lee, though he pushed the child from the os uteri so as to cause the knee to present; while Dr. Wright pushes it in the opposite, so that the head is brought near, by which means he seizes the head by the hand, which must of course pass the os uteri. In my plan, I need only pass one or two fingers, and bring the head by the external pressure and the internal fingers down to the os, and retain it there till the gentle uterine contractions have confirmed the new position.

The comparison of two cases will, I think, point out the marked difference between mine, "The Combined

External and Internal Version," and the plan of Dr. Wright.

The following are the cases alluded to :

CASE 16. From J. Braxton Hicks's work on External and Internal Version.

In this case, premature labor had been induced at the 7th month for contracted brim. At about 36 hours after the introduction of the sponge-tent, the membranes rupturing, I was summoned, and found the os uteri the size of a crown-piece, with the back of the thorax presenting. On passing the two fingers into the os uteri and placing the other externally on the lower part of the abdomen, I was able to make out the head lying toward the right side. By pressing it downward from without it impinged upon the two fingers within the os, and thus the head could be moved about at will, and was placed at the os uteri. It was then observed that the funis had passed down by the side of the head. I instantly replaced it by the internal hand and pressed the head into the os with the outer hand, which was done with great ease. By continuing the pressure for a half-hour, the funis was permanently kept up and the head remained firmly in the natural position. The pains being feeble and secale failing to act, the long forceps were applied, and the child was born alive and the patient did well.

CASE 18. From Dr. J. Braxton Hicks's work. Cephalic Version tried without success. Podalic Version performed with ease.

On my arrival I found the os nearly fully dilated, but firm; the left arm presenting up to the shoulder, and the head to the right side. The liquor amnii had escaped for a whole day. I pushed up the arm into the uterus with the two fingers of my left hand, and with the other on the outside pressed the head down into the os. However, from the active state of the uterus the face had a strong tendency to present, which continuing would have retarded delivery. I thought it best to deliver by the foot, (as it was not likely to be more disadvantageous to the child.) This I effected by transferring the outer pressure to the breech of the child. After a short time a knee came down to the os uteri, and as soon as I had pressed up the shoulder, which had a great tendency to be forced down, I delivered her of a living child. The patient recovered excellently. I at that time, in commenting on that case, made these remarks: "In this case, no doubt, I should have been more rapid had I chosen podalic version at first. It is not here the place to enter into the relative advantages of one presentation over the other; nevertheless, it seems to be best, all things being equal, to place the child in its most natural position for delivery. This case shows that in a transverse presentation cephalic or podalic version may be produced at will."

Case of Dr. Wright, described by Dr. Walker in the paper of Dr. Wright referred to above. Case of shoulder presentation, escape of meconium, rupture of water some fifty hours previously.

On Dr. Wright's arrival, the arm was suspended from near the centre of the superior strait. Dr. Wright proposed cephalic version. The fore-arm, which could be easily moved by the fingers, was extended, and the hand escaped through the os externum with the back anteriorly, the occiput in front, the face resting on the posterior surface of right iliac fossa, right cheek against the promontory of sacrum.

The body of the fœtus was then moved laterally and upward, by slight force applied to the presenting shoulder, until the breech had ascended to the fundus of the uterus. The face by this movement was made the presenting part. It was readily changed for the vertex; but this change could not be secured without the constant application of the finger to the occiput. Eight hours subsequently, the face again presented, which was not again deemed advisable to present. The fœtus was two and a half hours in delivery by the face, and was dead.

Case of Dr. Wright, reported by Dr. Terry. Case of shoulder presentation.

On Dr. Wright's arrival, he found the fœtus presenting with right hand, leg, and funis in the cavity of the pelvis. He attempted to turn by elevating the shoulder and making traction upon the leg. Failing in this, he endeavored to introduce his hand into the uterus, with a view to obtain control of both feet; but the uterus had contracted so thoroughly around the child as to render it impossible. The doctor then decided to resort to version by the head. The leg, arm, and funis were successively returned into the cavity of the uterus, and the vertex was brought into the superior strait with the posterior fontanelle behind the left acetabulum. Uterine contraction having ceased, it was deemed advisable to use the forceps; but the head being of too large a size, the forceps failed. The perforator was then used, and the rest of the delivery accomplished by the forceps.

Chloroform had been previously given.

I will not trouble you with further remarks than to say that those who neglect this free use of the external hand in version lose a very powerful assistant, and give themselves a vast deal more trouble, and their patients much more risk of injury, than is at all necessary.

Yours faithfully,

J. BRAXTON HICKS.

THE COMPARATIVE MERITS OF CRANIOTOMY AND THE CÆSAREAN SECTION IN PELVES WITH A CONJUGATE DIAMETER OF TWO AND A HALF INCHES OR LESS.

BY JOHN S. PARRY, M.D.,
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THE questions which it is proposed to discuss in this paper are among the gravest which can occupy the attention of the obstetric surgeon. In no branch of medicine do the problems which claim the consideration of the medical practitioner demand calmer judgment and nicer discrimination than those which are presented to the accoucheur for solution in such cases as these. Brought, as he is, to the bedside of suffering woman in the most trying moment of her existence, it is his duty at the best to undertake a most formidable operation. In the one case it is necessarily sacrificial, and in the other the risks are so grave that it can hardly be deemed conservative in its character.

No question in midwifery demands more careful investigation than this one, and its consideration has to be approached without parade or sentimentalism. Facts plain and unvarnished are demanded for its elucidation, and, singular as it may seem, these, so far as Cæsarean section is concerned, have been investigated with considerable care; but, as regards craniotomy in extreme pelvic deformity, the case is very different, as will become apparent as we progress in the discussion of this subject.

Some may question the propriety of making one clinical history the subject of a paper such as this is; but, as an excuse, it must be remembered that it rarely falls to the lot of one man to be called upon to deliver many women with pelves of two inches and a half or less in the conjugate diameter. It is more than probable that the statistics of the private practice of our most busy accoucheurs would prove very surprising.

Fleetwood Churchill, at the close of his busy and active life, tells us* that he has only performed craniotomy seven times in his private practice, which comprised the delivery of 2547 women, and of these only once for pelvic deformity after the failure of version.

These facts, with the hope that it may be the means of obtaining valuable information from others, seem to furnish a sufficient excuse for the preparation of this paper.

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* Dublin Jour. Med. Sci., June, 1872.

At the very outset of these remarks, it should be distinctly stated that nothing whatever will be said of minor deformities. Labor in women with a conjugate diameter of two and a half inches or less will alone claim our attention.

The following is the history of the patient who has been alluded to:

Narrow pelvis in a rachitic girl—Antero-posterior diameter one inch and a half—Embryotomy—Recovery.

Josephine Scott, aged about 24 years. Colored, single.

Previous history.—She was first pregnant some time before 1869, when she miscarried about the fifth month of gestation. The child was expelled without any difficulty, and no physician was with her until afterward.

In 1869, she again became pregnant. She fell into labor at full time in the obstetrical ward of the Philadelphia Hospital, under the care of my colleague Dr. R. M. Girvin, who in his notes of her delivery states that the conjugate diameter of her pelvis is under two inches.

In January, 1872, she was again admitted to the lying-in wards of the Philadelphia Hospital. She could give no definite account of herself, and did not know how far her pregnancy had progressed. She is a dwarf in stature, being only fifty inches high. Has been profoundly rickety in her infancy, though the distortion of the extremities is not very remarkable. Her thighs are bent forward at their middle, and the tibiæ are moderately crooked. The length of the arm from the acromion to the end of the middle finger is 22½ inches.

From the upper margin of the great trochanter to the heel, following the curves of the limbs, is 24½ inches. From the same point to the middle of the patella is 12 inches. From the middle of the patella to the outer malleolus is 12½ inches.

The pelvis was carefully measured upon several occasions with the finger, and with both King's and Lumley Earle's pelvimeters. The antero-posterior diameter of the superior strait is only one inch and a half, while the transverse is a little less than four inches. The promontory of the sacrum projects so far forward that the pelvic cavity seems to be filled by a bony tumor. The right half of the pelvis is rather larger than the left. These facts were confirmed by repeated examinations. The os uteri was very high up, almost out of reach of the examining finger, and was hard, irregular, and almost cicatricial in feeling.

The duration of gestation could not be determined with any certainty, because the girl could furnish no reliable information in regard to it, and the organs were so displaced on account of the pelvic deformity. She remained well until the 14th of March, 1872, when, upon consultation, Dr. Girvin and myself concluded to induce premature labor, not with the hope that a living child would be born, but simply to render the operation of craniotomy more easy. The os uteri was patulous, and a Barnes' dilator was introduced with great readiness; but it burst when distention was commenced. As no other was at hand, the operation had to be postponed. Dr. Girvin separated the membranes to a considerable extent, so that it was hoped that labor-pains would supervene. We therefore agreed to meet at 8 P.M. the same evening.

8 P.M.—Dr. Girvin was prevented from meeting me—a fact which I had great reason to regret, as his aid and advice would have been most serviceable, since he had already delivered the same woman at full time. During the afternoon, she had had pains at irregular intervals, and the os uteri was found to be dilating quite rapidly. It was too late to stop; so she was fully etherized, and the operation commenced in the presence of my colleague Dr. Duer, and Drs. Jenks, Ingham, the resident staff, and a number of medical students.

To complete the dilatation, the largest Barnes' dilator was introduced and fully distended; this, with the etherization, occupied about forty-five minutes. The head was in the first position of the vertex, was very high up, and was reached with the greatest difficulty. At a quarter before 9 P.M., a pair of Smellie's scissors was passed up and the head was opened, while Dr. Duer steadied it by placing his hand over the mother's pubis. Perforation was effected with great difficulty, because the head was so very high and so movable. Notwithstanding it was supported by Dr. Duer, it would recede before the instrument, which, after being started, did its work almost without being guided by the finger. Hodge's perforator was tried, with the hope that it would prove better, but it was soon abandoned, and Smellie's resorted to again. Two openings were made and afterward united—both through the right parietal bone. The brain was thoroughly broken up, and washed out by a copious stream of water.

The crotchet was applied, and firm traction made both by Dr. Duer and myself; but the head could not be brought down or made to engage at the superior strait.

An attempt was now made to apply Braxton Hicks's cephalotribe. The first blade, the one to the left side, was easily applied, though this was the narrow half of the pelvis. The right blade was introduced with the greatest difficulty. It passed up sufficiently far, and locked easily enough, but this could not be effected without sacrificing the finger as a guide. There was not sufficient room in the cavity of the pelvis, with the first blade in position, to allow the right or second blade to pass along the fingers as a guide.

It was, therefore, deemed unjustifiable to resort to any harsh measures to grasp the child's head. In spite of all that could be done, the second blade would enter the orifice made by the perforator, and, pushing the head before it, would carry this away from the other blade. An attempt was now made to seize the head with Simpson's cranioclast, but this likewise failed. Nothing was left us but to slowly pick the skull away with Meigs's embryulcia forceps. This was, indeed, an arduous task. Dr. Duer and myself worked away for the next hour, but neither of us was able to effect much. The pieces of bone removed were very small, only what were held in the grip of the forceps. The same was true of the cranioclast. It could only be applied with the utmost difficulty, and then tore out, bringing away a small piece of bone between the blades. The head could not be made to engage with the crotchet and combined pressure over the pubis.

These efforts were continued until after eleven o'clock. The woman had been under ether since eight. Her pulse was growing weak, her respirations were rapid and irregular, and her lungs filled with mucus, and the extremities cold. It was painfully evident to all present that the girl's condition was becoming very serious.

Another attempt was now made to apply the cephalotribe. The first blade was in position, and the introduction of the second was almost finished, when one of the gentlemen present leaned over me and whispered that he thought the first one had passed through the uterus into the peritoneal cavity. About the same time the handle of the instrument was thrust backward upon the perineum, when the outline of the opposite extremity was very clearly mapped out as it pressed the anterior abdominal wall forward. At the same instant I felt through the vagina what appeared to be a fold of intestine prolapsing a little to the left of the symphysis pubis. The situation was now sufficiently terrible. A careful examination, however, revealed the fact that the instrument was inside the uterus, which, with the anterior abdominal wall, was thin, and that the supposed fold of intestine was really the prolapsed cord. The handles of the cephalotribe were screwed together, but the instrument was not used as a tractor.

The cephalotribe was removed, but delivery could not be effected by either crotchet or cranioclast. For another hour, from twelve to one o'clock in the morning, we patiently worked away with Meigs's embryulcia forceps, pulling away little pieces of bone.

So slowly did the work go on, so rapidly did the patient's strength fail, that it seemed as if she must die undelivered. About half-past one o'clock, upon making a strong effort with the crotchet, the head was made to engage at the superior strait. We then succeeded in breaking away a few remaining portions of the frontal bone, when the chin was brought downward in the axis of the superior strait, and the head was seized with the cranioclast. With a severe effort it was dragged into the world, to the great relief of all present. The shoulders and pelvis were each pulled through the superior strait of the mother with considerable difficulty. The uterus contracted well; the placenta was removed in fifteen minutes, fortunately without any hemorrhage.

The woman had entered the eighth month of her pregnancy. The cranium was totally destroyed, the base only being left. The tissues of the face were much compressed, the superior maxillary arch having been decomposed, and the eyes forced from their sockets by the cranioclast.

The woman was put to bed, stimulants given freely, with little hope of her recovery. For several days she was desperately ill with peritonitis, but she finally recovered. This was due in a great measure to the unremitting attention of Dr. Jameson, the resident accoucheur. A month later, the patient left the hospital in perfect health, and she assured me that she "did not mind having a baby, that it did not hurt her any."

No better example could have been selected to illustrate the difficulties of craniotomy. Before the induction of premature labor, the propriety of resorting to Cæsarian section was gravely discussed. Two facts had to be considered in deciding the question. Craniotomy can hardly be called a conservative obstetrical operation, since it necessarily sacrifices the life of the child, while the dangers to the mother are by no means trivial. In this instance, however, Dr. Girvin had proved that a mutilated child could be brought through the pelvis. The second operation could be performed under more favorable circumstances, since gestation was not completed. But the event proved this to be no small task. The memory of the six weary hours which were spent at that girl's bedside will not soon be effaced, and it will be a long time before I cease to remember the keen regret which I felt that we had not considered more fully the propriety of resorting to the Cæsarean operation when we saw the symptoms of alarming prostration come on.

The statistics of this operation, so far as they are furnished us, go to show that the maternal mortality is high. Churchill* puts it down at one in five and a half. This statement is reiterated by Tyler Smith,† Hodge,‡ and others. If we examine cases as they are collected, this may appear to be the real mortality; and if so, we have a record which is indeed sad enough when compared with the loss of life in normal labor, which is about one in every 120 women.§ But it is to be remembered that the statistics of embryotomy are very fallacious. Drs. Hicks and Phillips* have reanalyzed those from which the conclusions of Churchill, Smith, and probably those of others were drawn, and have shown that their deductions are incorrect. No care whatever has been taken to separate the operation as a cause of death from the disease which demanded the interference; and they very justly argue that if the obstetric surgeon was forced to open the head to hasten delivery in a case of rupture of the uterus, and the woman died, she perished not from the operation, but in spite of it. It is very certain, therefore, that we must not compare the actual results of this mode of interference with the usually accepted statements.

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* System of Midwifery. 8vo. Phila., 1862. P. 372.

† "The Abolition of Craniotomy from Obstetric Practice, etc." Trans. Obstet. Soc. of London. Vol. i. p. 21.

‡ Principles and Practice of Obstetrics. 4to. Phila., 1866. P. 271.

§ Dr. J. M. Duncan. Mortality of Childbed and Maternity Hospitals. 8vo. New-York, 1871. P. 24.

The mortality from craniotomy varies greatly with the degree of deformity of the pelvis. In cases where the contraction is moderate, when delivery can be effected by simply evacuating the brain and extracting, the operation is one of the most simple and easily performed in obstetric surgery. Indeed, it is so simple that the difficulty is, not to operate, but to avoid operating. This is by no means to be compared with such cases as the one which has been put upon record in this paper, either in the difficulty in its performance, or the dangers to the mother. The former sinks into utter insignificance before the latter; and we do not fear contradiction when we say that, so far as the operator is concerned, Cæsarean section is much more easily done than craniotomy, when the antero-posterior diameter of the superior strait is two inches or below it. The mortality from craniotomy in moderately contracted pelves is not to be compared with that in cases in which the conjugate diameter is below two and a half inches. Until these distinctions are made, until other causes of death as the accidents of labor are eliminated, and until we cease to include these terribly grave embryulcia operations, with those less difficult ones which even the inexperienced can perform without trouble, we cannot make a comparison between the dangers of embryotomy and the Cæsarean operation.

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* Trans. Obstet. Soc. of London. Vol. xiii. p. 55.

During the past few years, the whole attention of obstetricians has been given to the perfection of means to avoid the latter operation, and to improving that of embyrotomy. The invention of the cephalotribe is certainly a most important advance in obstetric surgery, but it may be gravely questioned whether the advantages of the instrument have not been much overrated. Hemming has pointed out the fact that out of two hundred women upon whom cephalotripsy had been performed,* 39 died—a mortality of 19½ per cent. These cases seem to have been unselected. Jones† states that in the Hospital of the Clinique, at Paris, during three years—1857, 1858, and 1859—24 women were operated upon, 7 of whom died—a mortality of over 25 per cent. In eight of these patients, the conjugate diameter was below 2½ inches, and five of the fatal cases were among these women, showing most conclusively that in pelves with a conjugate less than that mentioned, the operation is very serious indeed—ay, so serious that the prognosis is almost too grave to contemplate. It is, indeed, a poor prospect of recovery which our art has to offer the mother when the chances are evenly balanced against her.

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* Cazeaux's Treatise on Midwifery. 8vo. Phila., 1869. P. 1054.

† The Management of Labor in Contracted Pelvis. 8vo. London, 1865.

This fact may well lead us to consider whether craniotomy and its modification, cephalotripsy, is the best method of delivery in pelves with a conjugate diameter of two inches or less. The tendency in recent times has been to improve the cephalotribe to such an extent as to abolish the Cæsarean section from the operations of the obstetric surgeon. This important improvement in our instrumental appliances, in conjunction with the induction of premature labor, has given new facilities for dealing with these cases, and will enable obstetric surgeons to avoid the terrible resort of Cæsarean section in many instances. But there is a space through which even a mutilated fœtus will not pass. The celebrated case of Elizabeth Sherwood* has proved that this is very small. Much more important is it to determine the space through which a dead child can be drawn with comparative safety to the mother, for the exceptional and desperate cases upon record are exceptions to, rather than examples of the rule.

We are willing to grant what we believe to be perfectly true, that no obstetric surgeon should resort to Cæsarean section rather than craniotomy or cephalotripsy, when he has more than two inches in the conjugate and three in the transverse diameter of the superior strait. Hodge says: † "If, however, the contraction of the short diameter of the pelvis be two inches or under, then, as we have already mentioned, the Cæsarean operation is to be performed, as affording a better prospect for the mother." Yet it must be remembered that this eminent man, whose opinion is entitled to the more respect because it was deliberately expressed as the conclusion derived from an experience of forty years, was fully convinced of the virtues of the cephalotribe, and himself modified the instrument in several important particulars. Even Cazeaux—than whom none, more eloquently mourns the slender hopes we can afford the mother under the circumstances—says* that we should prefer Cæsarean section to craniotomy when the conjugate is $2\frac{1}{8}$ inches and the child is alive. Greenhalgh,† in an able article upon the comparative merits of the Cæsarean section and craniotomy, expresses the following opinion: "I feel confident that the most sceptical must admit that the mortality to the mother is as great, if not greater, from craniotomy, in *extreme* distortion of the pelvis, as in the Cæsarean section." This opinion is certainly supported by this writer's own experience, for of six women with pelves the conjugate diameter of which did not exceed two inches and a half, five died between two, four, and seven days after delivery.‡ In consequence of this sad experience, he boldly says, "nothing would induce me again, even under the most favorable circumstances, to attempt delivery by the crotchet, when the conjugate (true) diameter of the brim does not fully measure two inches exclusive of the soft parts." It is not our purpose to fill this essay with quotations from various authorities, or else the citation of opinions confirming those already quoted could be indefinitely prolonged; but based, as they are, upon imperfect data and poorly analyzed statistics, they add but little additional force to the statements of Hodge, Cazeaux, and Greenhalgh. We cannot, however, forget the important declaration of Burns, "It is one thing to extract, and another to extract safely in extreme deformity."

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* Osborne. Practice of Midwifery. 8vo. London, 1795.

† Princ. and Pract. of Obstetrics. 4to. Philadelphia, 1866. P. 276.

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* Theoret. and Pract. Midwifery. 8vo. Philadelphia, 1869.

† Trans. Obstet. Soc. London. Vol. vii. p. 285.

‡ Ibid., p. 284.

On the other hand, it must not be forgotten that the advocates of craniotomy and cephalotripsy—we include them both under one head—claim that delivery can be effected, in extreme deformity, by that method more safely than by Cæsarean section. Pajot, of Paris, contends for the cephalotribe in a conjugate diameter of one inch and a quarter, and Barnes believes that with an inch and a half "the risk to the mother is inconsiderable compared with that attending the Cæsarean section."*

Braxton Hicks, who has probably produced the best cephalotribe now in the hands of the profession, has delivered through an inch and three quarters, and evidently believes that the range of utility of the instrument is considerably below this.

If we attempt to harmonize these diverse opinions, several very important facts must be taken into consideration. Although not the country in which cephalotripsy was revived—for this honor belongs to France and to Baudelocque—it is a noticeable fact that the strongest advocates of the instruments and the bitterest opponents of Cæsarean section are the English accoucheurs, who have resorted to the latter operation the least frequently and under the most desperate circumstances. It must not be forgotten that much of the statistical information which we possess of the mortality of both of these operations is utterly unreliable. Errors in regard to craniotomy are particularly glaring, as Hicks and Phillips have shown. It is entirely out of place to include all embryulcia operations under one head—as we said before, to compare the operation in a conjugate of 1.50 or 2.00 with that in 3, or 3.50—the one a procedure which is terrible in its details, the other a comparatively trivial process. It would be just as reasonable for surgeons to include all amputations of the lower extremity under one head. This is manifestly erroneous, for the mortality following amputation above the knee exceeds that of the operation performed below that joint; while the sad records of coxo-femoral disarticulations show that this is but a poor triumph for our surgical brethren. As we approach the centre of the body, in operations on the extremities, the mortality increases. As the conjugate diameter of the pelvis diminishes, so does the operation of craniotomy become more difficult and dangerous.

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* Obstetrical Operations. 8vo. New-York, 1870. P. 268.

There is another reason why it is not proper to include all craniotomy operations in one category. In the recorded cases, perforation has been resorted to at very different periods in the course of the labor—sometimes at its commencement, when the woman was strong and cheerful; sometimes at the end, when she was exhausted and weak, and when the operation was an almost forlorn hope. These two classes of cases are constantly included under one head, and constantly compared with one another.

It is as unreasonable as for a surgeon to estimate the mortality of amputations of the lower extremities by noting the number of deaths which follow the removal of the part in neglected cases, in which the proper time for operating has been allowed to pass, and the patient is exhausted and close to the narrow line which separates time and eternity. It is no use to argue that these cases are not parallel. As the skilful surgeon will anticipate the dangers of a case, and operate before his patient is exhausted by hemorrhages or prolonged discharges, so will the good obstetrician foresee the evil that is afar off, and in a vast majority of instances be enabled to perform embryotomy before his patient has been too much prostrated by ineffectual efforts to deliver herself.

Exactly the same remarks apply most forcibly to Cæsarean section. This operation is opposed by most English surgeons and accoucheurs, and it is indeed a dark record which they present to the professional world. Ramsbotham says,* that "out of at least fifty operations performed in the British Isles, there were only five instances of recovery, a mortality of 90 per cent. This statement nearly agrees with that of Dr. Playfair,† made in 1865, that only 11 per cent of the patients survived the operation in Great Britain. But the most reliable and important British statistics of this operation are those contained in the elaborate papers‡ of Dr. Radford, of Manchester. He has collected 98 cases, of which 82 or 83.67 per cent died, and 16 or 16.33 per cent recovered. This is truly but a poor record for British obstetric surgery, and removes any surprise which we may have felt at the attempts of their accoucheurs to improve the cephalotribe. But it is somewhat startling to learn that the operation has been much less successful in that country than it has on the Continent. M. Dufiellay* has shown that many more may be saved, and that it the Cæsarean operation be performed early and before the woman has become exhausted, only 19 per cent die, and 81 per cent recover. This conclusion is based upon an analysis of all the cases which occurred between the years 1845 and 1861. Dr. Harris† criticises his statements because these were not all cases of gastro-hysterotomy, as that writer calls the Cæsarean operation, but were some of them instances of abdominal section for the removal of a fœtus which had escaped into that cavity through a ruptured uterus. It is true that the uterus is not incised in these instances; but we cannot think that this fact vitiates the conclusions of M. Dufiellay, since this would probably be more unfavorable than the Cæsarean operation when performed at a proper time, and before the woman was exhausted. This would appear to be true, for the destruction of the continuity of the uterine tissues by rupture would probably be less favorable than by the knife, while this accident would be likely to occur in women who had been in labor for a long time, and who were, therefore, exhausted by its pains and anxieties. Another reason why this view appears to be correct is, that in rupture the fœtus and some blood are extruded into the abdominal cavity, one of which is entirely, and the other in a great measure, avoided in gastro-hysterotomy. In cases of rupture of the uterus requiring abdominal section, we would expect the mortality to be greater than after the Cæsarean operation when performed early and at a selected time, for the reason that the shock in the former is much greater than in the latter. In the former there are two wounds—the first occurring under the worst possible circumstances, and the second made by the surgeon as the *dernier* resort, to rescue his hopeless patient from the very jaws of death. In view of these facts, it is therefore improbable that the association of these two classes of cases has made the mortality from gastro-hysterotomy appear more favorable than it really is. If these results appear doubtful, however, let us take the less favorable experience of operators in the United States as a guide. Dr. Harris, in his elaborate memoir upon this subject, writes:* "If we calculate the risks of gastro-hysterotomy in this country, from cases operated on in cities and large towns, or by their surgeons in their immediate vicinity—giving them all the advantages that skill and service can command—we find that 60 per cent of the women recovered." Dr. Harris, in his second paper † on Cæsarean section in this country, publishes a table of 17 cases in which the operation was performed during or at the close of the first day of labor. Among these the mortality was less, $70\frac{10}{13}$ per cent of the women recovering.

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* System of Obstetrics. Philadelphia, 1865. P. 309.

† Trans. Obstet. Soc. Vol. vii., p. 288.

‡ Observations on the Cæsarean Section. 8vo. Manchester, 1865; and, Further Observations on the Cæsarean section. 8vo. Manchester, 1868.

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* Archives Générales de Méd. 1861.

† Amer. Jour. Obstet., Nov. 1871. P. 427.

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* Amer. Jour. of Obstetrics, November, 1871, p. 436.

† Amer. Jour. Obstetrics, Feb. 1872, p. 662.

This, it may be assumed, is nearer the truth than the other result, and is about 10 per cent higher than the estimated death-rate of M. Dufiellay. This being the case, the operation is deprived of many of its horrors, while the eloquent words of some of the advocates of cephalotripsy become but "sounding brass and tinkling cymbal." It cannot be denied that Dr. Barnes attempts to throw doubt upon the inferences drawn from statistics, and particularly alludes to those of M. Pihan-Dufiellay, and asks,* "What assurance have we that an undue proportion of successful cases are not recorded, unsuccessful ones remaining in the dark?" This, however, is little less than a tacit acknowledgment of the weakness of his position, and we now ask him how he will reply to the plain statements, and bare, bold facts recorded in Dr. Harris's papers, since he has spent months and even years in their collection, and since he expressly says: † "my experience has taught me that, in this country at least, the publication or withholding of cases has been very little influenced by favorable or unfavorable results, so far as the operation in question is concerned." He then states, "I have had more trouble in searching and obtaining abstracts of favorable cases than their opposites." In addition, we would ask the advocates of cephalotripsy what proof they have to furnish that records of unfavorable cases of delivery with that instrument are not hidden in mouldy note-books? The suggestion comes with as good grace from one side as the other. Barnes says:[*] "Obviously we cannot recognize fatal cases of craniotomy in extreme deformity, say of a conjugate diameter reduced to 2″ or 1.75″, unless the operation was begun under selected circumstances—that is, before exhaustion had set in—and conducted with due care and after the most approved methods." Obviously the same is true of the Cæsarean operation, and it is the very principle for which we have been contending through all these pages. It may be as fairly applied upon one side as the other.

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* Obstetric Operations. 8vo. New-York, 1870. P. 279.

† Loc. cit., p. 422.

The time has not long passed since wounds of the peritoneum were looked upon with the utmost dread by surgeons, but now they are made every day; and it is interesting to note a fact to which Dr. Playfair[†] has drawn attention, that the results of M. Pihan-Dufiellay's investigations give about the same mortality from Cæsarean section as from ovariotomy. In the American cases, tabulated by Dr. Harris, and in which all but cases of true gastro-hysterotomy were excluded, the death-rate is higher; but it is a noticeable fact that in Dr. Harris's second table, the estimated mortality really due to the operation is about 29 per cent, or about 4 per cent higher than that of ovariotomy. It may be urged that we should not compare these two operations, for in one instance we have the woman in the puerperal, and the other in the non-puerperal condition. This position is hardly correct, and a comparison of the two conditions will probably show that the puerperal is an equally favorable one for bearing an operation, because, though close to the border-land which divides health from disease, it is purely physiological in its character. On the other hand, the operation of ovariotomy is rendered necessary by a purely morbid process, and it is too often performed as the last resort. It may be urged that in gastro-hysterotomy two incisions are made—one through the abdominal wall, the other through an important internal organ—the uterus, and that therefore the operation will be found more dangerous than ovariotomy. But it is not to be forgotten that in the latter the pedicle is severed, a wound also internal in its situation, and that, in addition to this, extensive adhesions often have to be broken up, thus adding much to the dangers of the procedure. Yet with all this, 75 per cent of the women recover—certainly one of the proudest triumphs of the art and science of surgery. With this achievement before us, and the recollection that when first performed ovariotomy was a very fatal operation, we have every reason to believe that, with proper care, the Cæsarean section will be just as successful, and that from 75 to 80 per cent of the women operated on will recover.

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[*] Obstetric Operations. London, 1871. P. 314.

[†] Obstet. Soc. Trans. Vol. vii. p. 288.

In order to appreciate truly the comparative merits of the cephalotribe and Cæsarian section, it will be necessary to study the dangers of craniotomy and the mechanism of the action of the cephalotribe. Barnes* says that of the former there are five.

1. The perforator may strike the promontory of the sacrum.

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* Obstet. Operations. 8vo. London, 1871.

2. Spiculæ of bones may lacerate the soft parts of the mother.

3. The crotchet may slip and lacerate the mother.

4. The operation may be deferred too long.

5. Long-continued pressure may cause mortification and sloughing of the mother's soft parts.

Of these dangers three at least may be excluded, for we are now supposing that the patient has every opportunity that skill and attention can give her; and though the error may be easily committed, it is not to be supposed that an experienced accoucheur will thrust his perforator into the promontory of the sacrum for the fœtal head Such a man would also so carefully guard his crotchet that his own hand would be lacerated rather than the mother's tissues, if it slipped. We are supposing, too, that the operation would not be deferred too long, and that the woman would not have become exhausted before an attempt was made to deliver.

But spiculæ of bone may wound the mother's soft parts. This is particularly liable to occur in just those labors which we are considering, in which there is extreme pelvic deformity. It is alleged that this can be prevented by the cephalotribe, but it is very doubtful whether this can be more effectually prevented by that instrument than by the fingers of the operator when they are properly used. Theoretically, it would appear as if the cephalotribe would push the bones through the scalp when forcible compression is used; but Professor Hodge has especially investigated* this matter, and proved that the opinion has no foundation in fact.

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* System of Obstetrics. 4to. Phila. 1844. P. 277.

The writer conceives that a much more important point for consideration is the effect of pressure upon the soft parts of the mother. Every experienced accoucheur knows that the puerperal woman will bear an incredible amount of pressure upon the sensitive and delicate tissues of the genital passage during labor, and that the recovery from this is often surprisingly perfect. He is as thoroughly aware that there is a limit beyond which endurance ceases, when the effects of it, if they do not involve her life, may completely destroy her comfort and happiness.

In those cases of extreme pelvic deformity in which the operator is taken at a disadvantage, the dangers of sloughing of the cervix uteri, the vagina, and bladder are increased just in proportion to the diminution of the pelvic passages, and in proportion to the delay in delivery. But if delivery is to be effected by the crotchet, the embryulcia forceps, and the cranioclast, it is not difficult to see that these dangers are greatly increased, for the diminution in the size of the fœtal head is effected by dragging that structure downward against the mother's soft parts, supported by the bony pelvis, and making a fulcrum of these to enable the obstetric surgeon to twist the bones off.

Will the cephalotribe remedy this difficulty? In answering this question, it must be remembered that in the ovate and reniform pelvis, which is the variety of deformity in which we are most frequently called upon to deliver, in extreme cases, the blades of the instrument have to be passed at the sides of the pelvis, or in the transverse diameter. They consequently diminish the head in just that direction in which there is the most room, while through compensation its size is increased in the opposite direction, or that in which there is the least room and where there is the most danger from pressure. Hence, we are told to turn the instrument about in the cavity of the pelvis and to crush the head in the other direction. Pajot even performs a sort of lithotrity operation upon the fœtal cranium,* crushing from two to four times, at intervals of as many hours, and then extracting. Such suggestions may be very well with an antero-posterior diameter of over two inches and a half, but in our own case such a proceeding was impossible. The blades of the cephalotribe could only be put in one way, and even then not until a considerable part of the fœtal skull had been broken off and removed by Meigs's embryulcia forceps. After the introduction of the first blade, there was not sufficient room on the right side of the pelvis to allow its fellow to pass between the head and the brim, and hence it was not until a considerable part of the difficulty had been overcome that the instrument could be utilized.

In cases of this kind, the question to be solved is the delivery of the base of the skull through the contracted brim. In the delivery of his famous patient, Elizabeth Sherwood, Osborne† got the first glimpse of the principle by which this was to be effected, though it remained for his successors to fairly and fully elucidate it. Can you be certain that the cephalotribe has crushed and destroyed the base? Von Weber,[*] in experimenting on the heads of dead children, found that while the bones of the base may break, fractures are less common than simple bending of the bones inward, or turning upon themselves. Braxton Hicks makes the same statement,[†] and in a subsequent paper adds [‡] that "the reduction of the base . . . is a matter of great difficulty, and requires great power in the instrument." This consideration led Von Weber to conclude, that the most important action of the cephalotribe is that of a powerful tractor. Barnes[§] says that it may be made to partly crush the base, and evidently takes what is the correct view of the powers of the cephalo tribe—that it is useful rather to break up the perforated cranium than to diminish the size of the base, while its use as a tractor is a secondary consideration. In 1867, Braxton Hicks said plainly,[‖] the instrument "is not a tractor; and therefore, should pains be absent, we shall generally have to draw down the head by some other means." The same authority had previously insisted[¶] upon the importance of bringing down the base edgewise, with the chin foremost and in front, in delivery through extremely contracted brims. Three years later,[**] and again in 1870,[††] and after he had modified the cephalotribe, he reasserted this doctrine, distinctly stating that the instrument is intended to crush the cranium, so that the base can be brought through edgewise. Hicks[*] plainly asserts that it is intended to compete with the crotchet and craniotomy forceps, and not with Cæsarean section. In this way, and for this purpose, the instrument becomes a very valuable one, and in cases of moderate deformity will enable the obstetrician to effect delivery within a short time; for in these cases the vault has to be crushed, when, by turning the head of the child within the cephalotribe so as to adapt its new dimensions to the pelvic brim, and using the instrument as a tractor, the fœtus will easily come through. But the matter is very different in narrow pelves below two inches; and, so far as my own case is of value, it has gone to show me that the cephalotribe will not supplant the cranioclast. In this woman, after the vault of the cranium was broken away and the face turned downward, the crotchet was still ineffectual. At this juncture one blade of the cranioclast was applied beneath the lower jaw, and the other thrust up into the concave surface of the base of the skull, after which strong compression was made and the whole face crushed in the instrument, decomposing the supra-maxillary arch and forcing the eyes from the orbits. This, I conceive, may be an important application of the instrument when the face has been brought down in narrow pelves. If this has been effected, the cranioclast can nearly always be applied in this way. The concavity of the base of the skull secures a position for one blade of the instrument, where it can directly harm none of the mother's tissues, while if its fellow cannot be thrust between the lower jaw and the pelvic wall, it can be passed into the child's mouth. In this way, the vault of the cranium being removed, the vertical diameter of the face, which is ordinarily an inch and a half, can be reduced to an inch or even less. Certainly no accoucheur can desire more than this; for if it were necessary to reduce the fœtal head still further, the pelvis would be so small that he could not operate through it. As a tractor under these circumstances, nothing could be more satisfactory than the cranioclast, and its place cannot be taken by the cephalotribe either for safety or efficiency.

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* Arch. Générales de Méd., May, 1863.

† Practice of Midwifery. 8vo. London, 1795.

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[*] Quoted by Lusk, Med. and Surg. Reporter, June 8th, 1867.

[†] Trans. Obstet. Soc. London, 1870. P. 3.

[‡] Trans. Obstet. Soc. London. Vol. xi. p. 47.

[§] Obstet. Operations. 8vo. London, 1871. P. 301.

[‖] Brit. Med. Jour., Oct. 19th, 1867.

[¶] Trans. Obstet. Soc. London, 1864. Vol. vi. p 263.

[**] Brit. Med. Jour., Oct. 19th, 1867.

[††] Trans. Obstet. Soc. London, 1870. P. 3.

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[*] Brit. Med. Jour. Oct. 19th, 1867, and Trans. Obstet. Soc. 1870, p. 3.

The great virtue of the latter instrument is, that it enables us to get rid of the vault of the cranium quickly.

We have been treating delivery, thus far, as a mere mechanical problem. Such it is, and the accoucheur has to determine how he can bring a body of a given size through an unyielding curved canal with definite diameters; but it is totally unlike the problem which Hull and Osborne tried to solve by dragging dead children through orifices having the shape of contracted pelves, and made in unyielding boards. In the human female, it is never to be forgotten, that to this physical there is added a vital element, and that the accoucheur has to consider how much pressure the delicate and sensitive tissues in the pelvis and lining the genital passages will bear. Barnes says* most forcibly, that were this problem given an engineer to solve, he would soon devise means to bring a body the size and shape of the fœtal head through a chink from an inch and a quarter to an inch and a half wide. This solution had been furnished and acted upon before Barnes published a single line of his book—furnished by the accoucheur himself, it is to be feared, to the serious detriment of his patient; for this is not a question in engineering, but one which involves human life and the protection of important and delicate organs and tissues. Hence the question has to be solved, not in the laboratory or mechanic's workshop, but at the bedside of suffering woman, when she is performing her highest and most delicate function.

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* Obstet. Operations. London, 1871.

In 1829, on the 6th day of June, Baudelocque the nephew asserted before the *Institut Royal de France*, that, during the preceding sixteen and a half years, one half of the mothers delivered by craniotomy in the Maternité at Paris had died. Then and there, to avoid this fearful loss of human life, he proposed to revive the use of the cephalotribe of Assalini, and furnished a modification of it. That this instrument has received the attention which it merited, is proved by the fact that at the exhibition of the London Obstetrical Society, held in 1866, no less than seventeen different forms of the instrument were exhibited, while Hodge's,* and probably some others, were not shown. At the bedside it has been used in many a trying moment, and while English authorities laud it highly, our previous citations show that American and Continental writers assign it a more limited application.

Among the most recent observations which give us actual information of the clinical uses of the cephalotribe, are those of Dr. Karl Rokitansky.* These are peculiarly valuable, because this gentleman is the assistant of Professor Braun; and, besides having unusual opportunities for observation, has had the advantage of the counsel and experience of that eminent obstetrician, and may be fairly assumed to have had predilections in favor of the instrument. Of 103 cases of craniotomy coming under the observation of Rokitansky, 41, or about 40 per cent, terminated fatally. Speaking of the comparative merits of the cranioclast and the cephalotribe, he says: "In Professor Braun's clinic a much greater number of unfavorable cases had been treated by the cranioclast than by the cephalotribe, and yet the results of the former instrument were in every respect superior. . . . . With regard to the cranioclast, which, in truth, is nothing more than an extraction instrument, it may be asserted that its application, which can be made in every diameter of the pelvis, is never attended with that severe pain which is so often caused by the introduction of the cephalotribe." Of the nine cases of labor which Jones† observed in Paris, and in which the conjugate diameter was two and a half inches or less, eight were delivered by decomposing the head, and one by Cæsarean section. Of the eight women delivered by perforation and cephalotripsy six died—a mortality of sixty-six per cent. Dr. Jones adds: "If we consider that the total mortality of mothers and children is fourteen out of eighteen, we are led to deplore the impotency of obstetrical art in cases of this description." These facts led this author to assert "that cephalotripsy, when performed in a very narrow pelvis, is, notwithstanding the sacrifice of the child, a very murderous operation for the mothers."

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* Kidd. Dublin Quart. Journ. Med. Sci., Feb. 22, 1867, p. 4; and Catalogue of Instruments, &c. Pub. by London Obstet. Soc. 1867.

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* Wiener Medizinische Presse. 8–19, 1870; and Ranking's Abstract, Jan. 1872. P. 225.

† The Management of Labor in Contracted Pelvis. 8vo. London, 1867. P. 35.

Some of these cases forcibly illustrate the difficulties which may be met with in the use of the cephalotribe. In one instance,* where the conjugate diameter was two and a half inches, M. Dubois perforated, but could not bring the head down. This was at four P.M. At half past five, two fruitless efforts were made to grasp the head. The instrument was tried again at seven A.M. on the succeeding day, without effecting delivery, when version was performed, but the fœtus could not be extracted. After this time the woman was practically abandoned; but finally M. Dubois' assistant withdrew the child, which weighed only five and a half pounds, about the middle of the afternoon, just as the poor woman expired. This, indeed, is a sad commentary upon the usefulness of the cephalotribe, especially when we remember that the operation was done at the Hospital La Clinique, in Paris; when we remember that the instrument was in the hands of M. Dubois; when the woman's pelvis, as proved after death, was two and a half inches in the conjugate, and when the additional fact is stated that the labor began at ten P.M. on the 15th, and the operation was commenced at four P.M. on the 16th.

In another case, the woman, with a conjugate of two and a quarter, came under M. Dubois' care at ten

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* Ibid. p. 53.

A.M., when he perforated. Some time afterward, he attempted to apply the cephalotribe, when he could not catch the head, Dr. Jones says, because, "placed completely above the brim, it rolled under the pressure of the forceps, and escaped from the teeth of the instrument." Other unsuccessful attempts were made, and the delivery was abandoned till the next morning at nine A.M., when the contractions of the uterus had forced the head downward into the brim, and labor was terminated with the instrument at that time. The poor woman perished at six the same evening. The testimony in regard to the working of the instrument in these cases is very important, and certainly but poorly supports its utility in a conjugate of two and a half inches or less. The fact that so skilful an operator as M. Dubois repeatedly failed in grasping the head—that in one case, with a conjugate of two and a half, he practically abandoned he woman after manipulations extending over seventeen hours, and that his unfortunate patient died some five hours after it, just as his assistant drew away the fœtus, needs no commentary from us.

In M. Dubois' hands a smaller diameter than two and a quarter seems to have been an insuperable obstacle to delivery. In a case in which the conjugate measured only one and a half inches, he made four unsuccessful attempts to apply the cephalotribe, then abandoned her for several hours; made three attempts at delivery with the cephalotribe; failed signally, and the woman died undelivered a few hours afterward. The force of this fact will not be increased by any remarks. It teaches but too plainly its own dark, sad lesson. The autopsy showed the source of the difficulty. The vault of the cranium was broken away, but a great part of the base was found intact, and this was too large to pass the contracted brim. Certainly these cases do not speak well for the cephalotribe; but, on the contrary, carry with them most convincing proof that it is difficult to manage, and uncertain in its action. Yet these operations were done in the home of Baudelocque, the reviver of the instrument of Assalini. It must not be forgotten, however, that the French cephalotribe is much larger than either the English or the American instrument, and that, although M. Pajot says that delivery should be effected by it, and Cæsarean section excluded in women having a conjugate of one and a quarter or more, its application must be difficult, and its range of usefulness narrow when compared with our own and the British cephalotribes. But even when we give this its full measure of importance, we must admit that we have no clinical evidence that the cephalotribe is less dangerous than Cæsarean section in pelves with a conjugate diameter of 2½ inches or less. The few successful cases reported by Barnes and Hicks, of Great Britain, are insufficient to afford conclusive evidence that this instrument is equal to the cranioclast; while the observations of Jones and Rokitansky are decidedly in opposition to such a conclusion, and those of the former indicate that at least M. Dubois would have done well to have brought the children into the world by gastro-hysterotomy rather than by cephalotripsy.

If we now turn to the recorded histories of craniotomy and cephalotripsy that are to be found scattered here and there in periodical medical literature, we will be forced to conclude that perforation and breaking up of the fœtus is not more successful than Cæsarean section in pelves with a conjugate $2\frac{1}{2}$ inches or less. Much difficulty has been experienced in the collection of these cases. In the first place, the number upon record is not large; at least the number is not large which may be used for statistical purposes, on account of the want of accuracy in the records.

We have collected, from various sources, seventy cases, of which a tabular statement is appended. Of these, thirty-three, or 61.43 per cent, recovered, and twenty-seven, or 38.57 per cent, died. If we compare these results with those of Cæsarean section as performed in America, and tabulated by Dr. Harris, we find they are inferior; for according to that authority, $70\frac{10}{13}$ per cent of those, operated on "during or at the close of the first day of labor" were saved, and $26\frac{3}{10}$ per cent lost—a recovery of 10 per cent in favor of Cæsarean section, when properly performed and before the woman is exhausted. The death-rate of craniotomy appears still more unfavorable when compared with that of the cases collected by M. Dufiellay, but it is much less than that which has followed the operation of gastro-hysterotomy in Great Britain, which, according to Radford, is 83.67 per cent. But we must protest against the last being accepted as the true mortality. Indeed, Radford, who is a warm supporter of the Cæsarean operation, does this himself.

Some may marvel that no more than seventy cases of craniotomy have been tabulated, and indeed the number seems exceedingly small. Great difficulty has been experienced in finding these. The number of Cæsarean operations upon record is large enough. It is probable that nearly ten times as many instances of this operation as of craniotomy, in pelves with a conjugate of 2½ inches or less are upon record! *

Some may be disposed to question the justice of including certain cases in this table, in which delivery was finally effected by the Cæsarean operation. None appeal more strongly than these for a careful consideration of the comparative merits of the two methods of delivery. In all of these, craniotomy was previously tried and failed. This occurred in at least six of the seventy

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* In order to collect reliable statistics upon this subject, the writer addressed a circular letter containing the following questions to many of the prominent practitioners throughout the United States. He would be thankful to receive the record of any case in which delivery was effected or attempted by craniotomy, and in which the pelvis was not larger than that mentioned.

1. Age?
2. Number of pregnancy?
3. Cause of pelvic deformity. { Mollities ossium? Rachitis?
4. The diameters of the pelvis?
5. The presentation and position?
6. Duration of labor.
    - *a.* Before rupture of the membranes?
    - *b.* Before perforation?
    - *c.* After perforation?
7. Instruments employed.
    - *a.* Was the cranioclast used?
    - *b.* Was the cephalotribe used, and if so, whose?
8. What was the result of the case?
9. If fatal, what was the cause of death?
10. If not fatal, was the recovery perfect?
11. Remarks.

cases tabulated, and as the histories of these, with possibly one exception, prove that every effort was made to terminate labor in this way, they may very properly be included in estimating the mortality of craniotomy. One of these histories is peculiarly instructive, (case 18;) for Dr. Dyce bears the very important testimony that he attempted to deliver by bringing the face down, and failed.

It is to be hoped that the fact that in these pages this question has been considered purely as a scientific problem, and only as it relates to the mother, has not passed unnoticed. Until this moment the child has not been mentioned except in quotation. This is in accordance with the generally accepted doctrine that the mother's is the more valuable life. Questions in religion, morals, and political economy have not weighed with us in these remarks; and therefore the case of Cæsareanists becomes much stronger. If we remember that in the seventy cases included in the appended table, only thirty-three out of one hundred and forty lives were saved, the truth becomes almost too horrible to contemplate.

In conclusion, if we accept the premises laid down as true, we are justified in drawing the following deductions:

1. If gestation has advanced to the full term and the conjugate diameter of the superior strait be two inches and a half, craniotomy affords the mother no better chance for recovery than Cæsarean section; and that if the diameter be two inches or less, exclusive of the

soft parts, it is the duty of the accoucheur to perform gastro-hysterotomy rather than craniotomy.

2. The recorded histories of cephalotripsy in such cases afford us no evidence that it will compete with the Cæsarean section in safety, while French and German experience seems to show that cranioclasm is both more safe and more efficient.

3. English accoucheurs, who are the firmest supporters of cephalotripsy, have not yet recorded a sufficient number of facts to controvert this position.

1513 Arch Street, Philadelphia.

No. of Case, and Reporter.	Reference.	Result.	Dimensions of Brim.	Cause of Death.	Length of Labor.	Remarks.
1. Smellie..................	Cases and Observations in Midwifery. 8vo. London, 1766. Vol. iii. p. 13.	Recovered.	Conjugate, $2\frac{1}{8}$.			Delivered with the crotchet, and much force was used.
2. Hamilton................	Pract. Observations, p. 263.	Recovered.	Conjugate, + $1\frac{1}{2}$.			It required so much exertion to effect delivery, that Dr. Hamilton had to be carried home on a sedan chair.
3. Osborne.................	Pract. of Midwifery, 8vo. London, 1795.	Recovered.	Conjugate, $\frac{3}{4}$; transverse, 4.		Had continued nearly 3 days before perforation, and lasted nearly 2 days afterward.	The case of Elizabeth Sherwood. Perforation was effected, the child was allowed to decompose, the whole vault of the cranium was removed, and the base brought through edgewise. The thorax and abdomen were both perforated to effect delivery.
4. Clarke.................	London Med. Jour. 1786, quoted by Osborne.	Recovered.	Conjugate, $1\frac{1}{8}$.		Before perforation, 22 hours; after perforation, 16 hours.	After perforation, it was intended to leave her until the child putrefied.
5. Clarke.................	London Med. Jour. 1786, quoted by Osborne.	Recovered.	Conjugate, $1\frac{1}{8}$.		At least 3 days before perforation; about 8 hours after perforation.	Was left after perforation until the uterus moulded the head.
6. Robert Lee.............	Clin. Midwifery, 2d ed. London, 1848. P. 85.	Died.	Conjugate, $1\frac{3}{4}$. The tuberosities of the ischia.			This is the celebrated case of Mrs. Jarvis, who, after giving birth to three children, suffered from mollities ossium. In 1830, she was delivered by Dr. Lee after great difficulty, but the size of pelvis is not mentioned. In 1832, she had another long labor, and

			were only 3 or 4 lines asunder.			was delivered by the crotchet in the orbits. In 1833 and 1835, premature labor was induced. The dimensions of the pelvis are not mentioned until 1836, when they were obtained at her post-mortem; but as mollities ossium was the cause of the difficulty, as this is a progressive disease, as premature labor was induced at the 7th month, in Feb., 1835, when the fœtus was expelled without assistance, and as Dr. Lee attempted to induce labor at the end of the sixth month, in Jan., 1836, and as he failed in effecting it until the succeeding March, it is fair to conclude that the pelvis had progressively changed.
7. Robert Lee.............	Ibid., p. 89.	Recovered.	Conjugate, 2 in.			She was subsequently delivered by premature labor.
8. Robert Lee.............	Ibid., p. 46.	Recovered.	Not mentioned, but it was very narrow.			The operation lasted five hours, and the pelvis was so narrow that the child, which was at full term, could not be drawn through. The skull would not pass until the base was entirely destroyed.
9. Robert Lee............	Ibid., p. 87.	Died.	Conjugate, 1⅜; oblique, 1¼, (right;) oblique, 1½, (left.)	Suffering from mollities ossium. Long labor.		Labor was induced at 6½ months. The pains had continued for five or six days when the nates were found to present.
10. Cox	Provincial Med. and Surg. Jour., vol. 8, p. 382.	Died.		Labor.	From 30 to 40 hours.	Craniotomy was tried and failed. Forced to resort to Cæsarean section.
11. Keiller..................	Trans. Edinburgh Obstet. Soc., 1872, vol. ii. p. 46.	Recovered.	Conjugate, under 2 inches.			Delivered with the cephalotribe.
12.	Amer. Jour. Med. Science; ——; Hodge's Obstetries. 4to. Phila., 1866. P. 285.	Recovered.	Conjugate, 2.			The celebrated case of Mrs. Reybold.
13.	Ibid.	Recovered.	Conjugate, 2.			The 2d labor of Mrs. Reybold, who was afterward safely delivered upon two occasions by the Cæsarean operation.

No. of Case, and Reporter.	Reference.	Result.	Dimensions of Brim.	Cause of Death.	Length of Labor.	Remarks.
14. Murphy	Dublin Quart. Jour., Feb., 1859, p. 123, and Lancet, Apr. 3d, 1847.	Died.	Conjugate. 1½; transverse, 4½.	Exhaustion. There was no lesion discovered at the post-mortem to account for death.	3 days.	There was great difficulty in effecting delivery. The operation was performed at Rickmansworth. Had the patient been in London, Prof. Murphy would have performed Cæsarean section.
15. Shekleton	Dublin Quart. Jour., Nov., 1850, p. 287.	Died.	Brim would only allow one finger to pass.	Ruptured uterus.		The pelvis was obstructed by a tumor. It was the woman's sixth labor.
16. Henry Oldham	Med. Chir. Trans., vol. 34, p. 89.	Died.	Conjugate, 2.	Labor.	84 hours.	Mother was rickety. Labor was induced at the 7th month. The cranium was entirely, and the base partly broken up, when the right hand and foot were found in the brim. They could not be brought down and the operation of Cæsarean section was performed.
17. Humphry	Asso. Med. Jour., vol. iv., 1856, p, 779.	Died.		Labor.		Craniotomy was tried and failed. She lived two hours after it.
18. Robert Dyce	Edinburgh Medical Jour., vol. vii. p. 895.	Died.	Conjugate, 2 in.	Labor.	4 to 5 days.	Craniotomy was performed. All the cranium and even a part of the base were broken down. Tried to bring the face down *and failed.* Forced to resort to Cæsarean section to effect delivery. Lived 43 hours afterward.
19. Ramsbotham	Med. Times and Gazette, July 5th, 1862, p. 6.	Recovered.	Conjugate, 2 in.			Delivery effected by destroying the vault of the cranium and bringing the face downward.
20. Ramsbotham	Ibid., Aug. 23d, 1862.	Recovered.	1¾ on the left side.			The obstruction was due to a pelvic tumor.
21. Ramsbotham	Ibid., Sept. 6th, 1862.	Recovered.	Conjugate, 2½.			Took only an hour to deliver.

22. Pajot… ……………	Gaz. des Hôp., Jan., 1862.	Recovered.	Conjugate, 1⅞ in.			
23. Johnson……………	Lancet, Nov. 1st, 1862.	Died.	Conjugate, 2⅓.	Labor.		Craniotomy was tried and failed to deliver. Resorted to Cæsarean section.
24. Murphy . ……………	Dublin Quarterly Jour., May, 1861.	Died.	Conjugate, 2¼.			Had bronchitis when admitted, but it was mild.
25. Murphy ……………	Ibid., May, 1864.	Died.	Conjugate, 2 1-5.	Exhaustion.	Total, 72 hours; after perforation, 4 hours.	In this and the previous case Dr. Murphy resorted to craniotomy rather than Cæsarean section because the child was dead.
26. Makenzie……………	Trans. Obstet. Soc., London. Vol. 1. p. 267.	Died.	Conjugate, 2⅜; transverse, 5¼.	Fatigue and shock.		Craniotomy was commenced as soon as os was dilated. Delivered by craniotomy forceps. Cephalotribe was not used.
27. Hicks ………………	Ibid., vol. vi. p. 292.	Recovered.	Conjugate, 2¼.			
28. Hicks ………………	Ibid., p. 294.	Recovered.	Conjugate, 2⅓.			
29. Hicks ………………	Ibid., p. 296.	Died.	Conjugate, 2¼.	Exhaustion, and delay in operating.		Had been in labor 24 hours before Dr. Hicks saw her. Was delivered by perforating and bringing the face downward.
30. Hicks ………………	Ibid., p. 296.	Recovered.	Conjugate, about 2in.			Pelvis was obstructed by a tumor.
31. Bryce ………………	Edinburgh Medical Jour., Aug., 1861, p. 179.	Recovered.	Conjugate, 2½.		About 4 days.	Delivered with the cephalotribe.
32. Greenhalgh…………	Trans. Obstet. Soc., vol. vii. p. 281.	Recovered.	Conjugate, 2¾.			
33. Greenhalgh……… ….	Ibid., p. 282.	Died.	Conjugate, 2⅜.	Rupture of uterus.		This was the same as the previous patient. Could not steady the head to perforate, and had to perform version. Dr. G. believed the rupture of the uterus was due to the ineffectual efforts to perforate.
34. Barnes. . …. …. ….	Ibid., vol. vii. p. 287.	Recovered.	Conjugate, 1¾.			

No. of Case, and Reporter.	Reference.	Result.	Dimensions of Brim.	Cause of Death.	Length of Labor.	Remarks.
35. Greenhalgh............	Ibid., vol. vii. p. 220.	Died.	Conjugate, 1¾; transverse, 5.	Difficulty in operating. Rupture of uterus.		Failed to deliver the head by craniotomy. Had to do it by Cæsarean section.
36. Kidd..................	Dublin Quarterly Jour., Jan., 1867, p. 334.	Recovered.	Conjugate would admit two fingers.			She was 7½ months pregnant and the child was putrid, and the woman was in a deplorable condition. Although Dr. Kidd does not state that the conjugate was under 2.50, his quotation from on p. 336 also shows that it was.
37. F. Bird................	Radford. Observations on Cæsarean Section. Manchester, 1868.	Died.	Conjugate, 1¼.			Craniotomy was tried, failed, and resorted to Cæsarean section.
38. A. Milne...............	Edinburgh Medical Jour., July, 1868.	Recovered.	Conjugate, 2½.		Before perforation, 24 hours; after it, 25 minutes.	Delivered by the cephalotribe.
39. W. H. Jones...........	Management of Labor in Contracted Pelvis. 8vo. London, '67. P. 57.	Recovered.	Conjugate, 2 in.		15 hours.	Breech presentation. Delivered by detruncation and cephalotripsy.
40. W. H. Jones...........	Ibid., p. 58.	Died.	Conjugate, 1½.	Labor. Died undelivered.		At full term. Had been four days in labor when admitted to hospital. M. Dubois perforated with difficulty at 9½ A.M., and tried four times to apply the cephalotribe and failed. At 4 P.M. applied it and tried three times without success in bringing down the head. At the autopsy a great portion of the base of the cranium was found intact.
41. W. H. Jones...........	Ibid. Table of Cases.	Recovered.	Conjugate, 2½.		106 hours.	Delivered by craniotomy and cephalotripsy.
42. W. H. Jones......	Ibid. Table.	Recovered.	Conju. 5⅜.		20 hours.	Craniotomy and cephalotripsy.
43. W. H. Jones........ ...	Ibid. Table.	Recovered.	Conju. 2⅜.		38 hours.	Craniotomy and cephalotripsy.

44. W. H. Jones	Ibid. Table.	Died.	Conju. 2 in.		34 hours.	Breech presentation. Detruncation and cephalotripsy.
45. W. H. Jones	Ibid. Table.	Died.	Conjugate, 1¾.	Exhaustion. Arthritic of pubis.	24 hours.	Delivered by cephalotripsy repeated with traction, after Pajot.
46. W. H. Jones	Ibid., p. 52.	Recovered.	Conjugate, 2½.		3 days, but pains not active for 2 days.	Pregnant 7½ months. Version by M. Dubois after many laborious attempts. Head delivered by the cephalotribe.
47. W. H. Jones	Ibid., p. 53.	Died.	Conjugate, 2½.	Exhaustion.	Total, 40 hours. Perforation at end of 18th hour.	Full term. Died just after delivery was effected. Cephalotribe applied at 15th hour, but could not be delivered. In two hours tried again, but could not grasp the head. This was at 5½ P.M. Left till 7 A.M. the next day, when M. Dubois again applied the cephalotribe in vain. Version performed. Cephalotribe applied to pelvis and unsuccessful attempts at traction. Traction upon feet recommended at this time, but the patient was practically abandoned.
48. W. H. Jones	Ibid., p. 56.	Died.	Conjugate, 2¼.		44 hours; about 23 after perforation.	Full term. Perforation at 10 A.M. by M. Dubois and left to nature for some time, when an attempt was made to crush with the cephalotribe, but could not catch the head. 8 P.M. unsuccessful attempts repeated. The next morning at 9 A.M. the labor was terminated with the instrument. The extraction of the fœtus was attended with a discharge of fœtid gas and bloody fluid of such a nature that those present "were much affected by it."
49. Radford	Observations on Cæsarean Section. 8vo. Manchester, 1865. P. 48.	Died.	Conjugate, 2 1-12.	Could not effect delivery, and the vagina ruptured.		Cause of distortion, mollities ossium.
50. J. A. Byrne	Dublin Quart. Jour., May, 1868.	Recovered.	Conjugate, 2½.		Over 41 hours.	Delivered with the cephalotribe.
51. J. H. Davis	Parturition and its Difficulties. London, 1865. P. 292.	Recovered.	Conjugate, 1¼.			Waters had escaped two days before she was seen by Dr. Davis.
52. J. A. Ransome	Trans. Obstetrical Soc., p. 158. Related by Dr. Radford.	Died.	Conjugate, 2¼; transverse, 3¼.	Undelivered. Ruptured uterus.	72 hours.	Craniotomy was tried, but delivery could not be effected by it.

No. of Case and Reporter.	Reference.	Result.	Dimensions of Brim.	Cause of Death.	Length of Labor.	Remarks.
53. O. Von Franque........	Scanzoni's Beiträge, 1869. N. Syd. Soc. Bien. Ret., 1869–70, p. 418.	Died.	Conjugate, 2½; transverse, 4.6.	Diphtheritis of vagina and uterus.		Delivered by the cephalotribe. Child weighed 6 pounds, and was born after "protracted proceedings."
54. Barnes..................	Obstetric Operations. 8vo. London, 1871. Trans. Obstet. Soc., vol. xi. p. 191.	Recovered.	Conjugate, 1½.			Barnes states that he used the cephalotribe with perfect success. The mother was in St. Luke's workhouse.
55. Girvin..................	Register of Philadelphia Hospital.	Recovered.	Conjugate, 1½.			Delivered with Meigs's embryulcia forceps and the cranioclast at full term.
56. Parry..................		Recovered.	Conjugate, 1½.		Nearly 7 hours.	Same woman who was operated on by Dr. Girvin. Labor induced at 8 months.
57. J. G. Mitchell..........	Lancet, (Amer. ed.,) vol. ii., 1853, p. 369.	Recovered.	Conjugate, 2¼.			Her second pregnancy.
58. John Ramsbotham......	Pract. Observ. on Midwifery. 8vo. Phila. 1822. P. 333.	Recovered.	Conjugate, 1½ to 1¾.		Before perforation, bet. 3 & 4 days; after perforation, 7 hrs.	
59. John Ramsbotham......	Ibid., p. 331.	Recovered.	Conjugate, under 2½.			Labor induced at 8 months.
60. A. B. Granville.........	Rep. of the Practice of Midwifery at the Westminster Dispensary. 8vo. London, 1819. P. 98.	Recovered.	Conjugate, 1¾.		Before perforation, 2 days; after perforation, 7½ hours.	Measurement by Merriman.
61. A. B. Granville.........	Ibid., p. 103.	Recovered.	Conjugate, under 1⅝.			
62. Philip Harvey, Iowa....	Private communica-	Recovered.	Conjugate,			This woman has been delivered by craniotomy five

	tion to writer.		about 2 inches.			times—twice in Germany, once in New-York, and twice by Dr. Harvey. He writes that her recovery has always been rapid and perfect.
63. Prof. W. H. Taylor, Cincinnati, O.	Private communication to writer.	Recovered.	Conjugate, 2¼.			Her fourth pregnancy. Craniotomy had been performed in two other labors.
64. Thomas M. Logan, Sacramento, Cal.	Private communication to writer.	Recovered.	Conjugate, 1 inch.			This was the woman's 3d pregnancy. Cause of deformity was mollities ossium. Her first child was born alive. The second was delivered by embryotomy.
65. Prof. Fordyce Barker, New-York.	Private communication to writer.	Died.	Pelvic cavity nearly filled with a bony tumor.		Was in labor 2 days under care of a midwife before seen by any physician.	The operation was completed with great difficulty. Lived two days after delivery.
66. Prof. Fordyce Barker, New-York...	Private communication to writer.	Died.	Conjugate, less than 2 inches.		Duration of labor, 30 hours.	Died a few hours after delivery.
67. Prof. Fordyce Barker, New-York.....	Private communication to writer.	Died.	Cavity of pelvis filled with an osseous tumor. No diameter exceeded 1¾ in.		Perforation 9 hrs. after discharge of waters.	Dr. Barker desired to perform Cæsarean section in this case, at a consultation held before the commencement of labor, but craniotomy was performed.
68 Prof. Fordyce Barker, New-York...	Private communication to writer.	Recovered.	Conjugate, less than 2 inches.			
69. Dr. R. P. Harris, Philadelphia, Pa	Private communication to writer.	Recovered.	Conjugate, 2⅓.		In labor 4 days before perforation.	Operation was performed by Dr. C. D. Meigs, at the Pennsylvania Hospital, in winter of 1843-4. The "Cæsarean operation was discussed and declined by Dr. Peace."
70 Drs. Thomas A. Downs and R. M. Girvin, Philadelphia.	Private communication to writer.	Recovered.	Conjugate, 2½.		Total, 17 hours.	

HISTORY OF THE REMOVAL OF A LARGE SESSILE SUB-MUCOUS FIBROID BY ENUCLEATION.

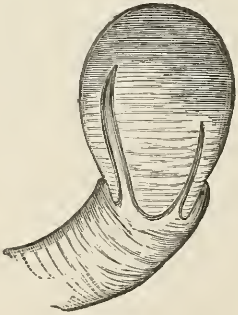
By HENRY MOELLER, M.D., New-York.

THE patient, Mrs. X——, a native of Germany, æt. 46, is the mother of ten children, the youngest of whom is ten years old. She was perfectly well until nine years ago, when she had an abortion at about the third month of pregnancy. After that, she never regained her full health, though she had no marked suffering until two years and a half ago. At that time, menstruation became more painful and prolonged, the flow was more profuse, and appeared every three weeks, the intervals between the periods being less than two weeks. She gradually became anæmic, lost flesh and strength, and was fretful and irritable. This condition continued until about a year ago, when she consulted me. She then had, in addition to those already mentioned, the following symptoms: rheumatic pains in both legs, especially the left, which was quite cold and had varicose veins; swelling of the feet and the lower parts of the legs, which was more marked at the approach of menstruation; a variable appetite and impaired digestion; great tendency to constipation and tympanitic swelling of the abdomen; a very irritable bladder, small quantities of urine, of high specific gravity, being discharged at short intervals; a constant feeling of uneasiness in the pelvis, which at menstrual periods became increased to severe pain, most intense over the right iliac fossa, that confined her to bed for from one to three days. At these periods the flow, after having been established for a day or two, would cease for a day, and then make its reappearance after excessive pain throughout the pelvis and the discharge of clots. From the sixth to the tenth day, the flow consisted of a serous liquid of a turbid, bloody appearance. During the intervals of from ten to fourteen days between the periods, there was more or less discharge of a muco-purulent liquid.

As the patient objected to a vaginal examination at that time, palliative means were employed for the relief of distressing symptoms. Ferruginous and other tonics were used with some little benefit, as she did not lose strength while taking them. Pepsine was given for the digestion, and sometimes a mild cathartic was of service. She continued in about the same condition until the 8th of last August, which was the eighth day of menstruation, when the pain through the pelvis, back, and limbs became excessive, the suffering being like that of labor, while the anodynes usually employed gave her but little relief. A digital examination being now consented to, a hard, resisting tumor about the size of a man's fist was discovered, protruding partly through the os uteri, which was largely dilated and very thin and tense. The insertion of the finger between the tumor and the os was difficult and gave intense agony. Pressing the tumor upward allowed the escape of a moderate amount of reddish serum. Later in the day, several large clots were discharged, which relieved the patient very much. Serum and clots were discharged alternately up to August 17th, the patient suffering more or less during the whole time.

After making the diagnosis, an operation for the removal of the tumor was advised at once as the only means of giving permanent relief. This the patient readily consented to; but owing to the absence of Professor T. G. Thomas from the city, it was delayed. From August 29th to September 5th, clots and blood were again discharged. Professor Thomas being then called in consultation, confirmed the diagnosis. The lower portion of a hard tumor was felt attached by a broad base to the posterior wall of the cervix and uterus when the uterus was pressed firmly down.

The following diagram will convey to the mind of the reader the attachments of the growth.



September 9th, at 3 P.M., was agreed upon as the time for the operation. At that hour the patient, after a light dinner of beef-soup, egg, and a little wine, was ready for the operation, and confident of its success.

A table having been prepared, the patient was placed on her back upon it, and ether administered.

Prof. Thomas then proceeded to operate in the presence of Drs. Brown, Ward, Walker, and myself. Having introduced the whole hand into the vagina, he passed along its palmar face a pair of long, curved scissors, and by these cut into the capsule. Putting. his index-finger into the opening thus made, he tore the orifice so that he could run between the capsule and tumor a grooved director made for the purpose, as large as a No. 10 steel sound; sliding the scissors in the groove of this, he then cut freely across the capsule over its entire unattached surface. Removing the scissors, he commenced enucleating the mass, and after thirty minutes of very hard labor, removed a fibroid the size of a large Irish potato.

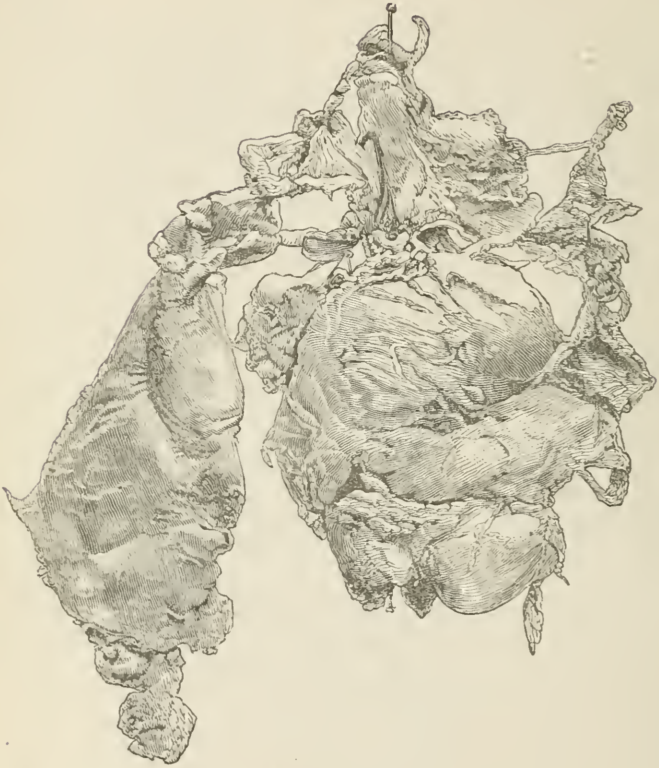
Again passing in his hand, he detected at the fundus a round, protuberant body, which he at first regarded as the fundus uteri, but upon further investigation he found this to be a portion of the mass already removed, and after twenty minutes more of effort, he removed this also, with the entire capsule of the tumor.

The whole operation occupied fifty minutes. There was not much hemorrhage, and the patient stood it well.

The following diagram, taken by photograph, represents the tumor with its capsule attached. It was of about the size and shape of a moderate-sized human heart when bereft of its capsule.

It was three inches and half in length, three inches wide, an inch and a half thick, and its weight was a trifle over eight ounces.

It was composed of twelve fibroids, varying in size from that of a kidney to that of a large pea. Each fibroid had its own capsule, and all were connected most inti-



mately by thick and strong fibrous bands looking like the columnæ carneæ. Similar bands also surrounded the entire surface of the tumor, and were equally firm in their attachment to its capsule and the uterine wall.

Sections having been taken, were found to be very white and glistening, like tendon; and when examined by the microscope, were seen to be almost entirely composed of slender fibres arranged in closely packed bundles.

The patient regained consciousness in about an hour after the operation and complained of pain. She was at once quieted by opium and kept under its influence, the maximum amount never exceeding seven grains in twenty-four hours. The cavity of the uterus was daily syringed out with the following solution made luke-warm.

℞ Acidi carbolici cryst., gr. x.; Aquæ, ℥ xvj. Ft. sol. A large male catheter was attached to a Davidson's syringe, the bulb of which was compressed once or twice to expel all air, and then the solution injected well up into the uterus once a day until September 15th.

On the fourth day after the operation, solution of citrate of magnesia was ordered, and acted very freely upon the bowels, giving the patient much relief, and this was repeated on the seventh day.

Now, on the ninth day, the patient is considered convalescent, and is allowed to sit up part of the day. She has no pain, and there is only a slight serous discharge from the uterus.

Three days subsequent to this note, the patient was seized with phlegmasia dolens in the right leg, from which she had suffered some years before, after childbirth. In three weeks this passed off, and at the end of six weeks she was discharged cured.

Several months have now elapsed since the writing of the above history. The patient has grown fat and strong; the menstrual periods are regular and normal in amount; and the patient appears to promise well for a long life, which would surely have been shortened and rendered miserable if this operation had not been brought to her relief.

339 West Thirty-ninth Street.

CLINICAL REPORTS.

CLINICAL LECTURE
ON THE
DISEASES OF WOMEN,*

By T. Gaillard Thomas, M.D., *Professor of Obstetrics and Diseases of Women and Children in the College of Physicians and Surgeons, New-York.*

LECTURE OF DECEMBER 6, 1872.

Case of Ovarian Cyst.

The first case, gentlemen, which I show you to-day is in the person of Miss S———, æt. 23, born in the United States, and single.

She says she has been sick during the last year. The chief symptoms from which she has suffered are pain in the side, pain in the back, and pain down the thighs. She has also had a burning pain in the left inguinal region; suffered from general debility, vomiting, palpitation of the heart, and pain in the head. She has been perfectly regular with regard to her monthly periods. Previous to last year she was in ordinary health, although always delicate; but thinks that within the past year she has emaciated a very little. There is one other symptom which the patient neglects to give us, and which is decidedly important, namely, the presence in the abdominal cavity of a large tumor. This enlargement of the abdomen was first noticed in the early part of last year, and now it has advanced to such an extent that it is the source of great discomfort.

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* Phonographically reported for the Journal by Wesley Carpenter, M.D.

Physical Examination.—The first thing that meets our eye, as the abdomen is exposed, is the presence of a large protuberant mass filling the abdominal cavity generally and symmetrically. The next step to be taken in the consideration of the case, is to determine, if possible, what the nature of this mass is; whether it is the cause of the symptoms of which the patient complains, and whether it is concerned in the diagnosis or not. When you approach such a case as this, it is always well to run over in your mind the pathological states which may give rise to such a condition as we have here. This is important, not only in this case, but whenever you approach a diagnosis at all, it is well to inquire what are the causes that may give rise to the existing condition, whatever that may be.

For example, when you are called upon to visit a case of supposed ordinary colic, do not give a dose of opium simply, without determining, if possible, what the pain may be dependent upon, for it may be produced by the passage ot a gall-stone; and in that case your diagnosis would not be ordinary colic, but passage of a gall-stone, the term colic expressing but a single symptom.

These remarks apply particularly to the study of abdominal tumors of the female, because it is one of the most intricate subjects you will have to deal with in the whole department of gynæcological science. In connection with this class of diseases, very many mistakes are made, and often made by pure carelessness upon the part of physicians who have them under observation. Even to-day, coming in contact as I do almost daily with this class of diseases, I find that the only method of examination which gives me a fair chance of avoiding errors in diagnosis, is first to go over every case in the same manner as I shall go over this case with you. Let us therefore inquire what are the conditions that may cause enlargement ot the abdomen in any case.

(1.) The first cause which we will mention is *tympanites.* In a hysterical woman an immense amount of air will sometimes collect in the intestinal canal. These are the cases in which we have those phantom tumors, by which many a man has been deceived. So great has been the deception and mistake in these cases that experienced operators have cut into the abdominal cavity with the unfortunate result of giving ocular demonstration of the presence of a gaseous collection, instead of the presence of an ovarian tumor.

(2.) Ascites may produce an enlargement of the abdomen, and this woman may have cirrhosis of the liver, which has given rise to such an accumulation of fluid.

(3.) Utero-gestation may cause such an enlargement, and there are several reasons for suspecting that this is the cause in the present case. All the gastric symptoms of which she complains could be very easily explained by that condition, and the general depreciation of strength might depend upon the mental state easily induced in an unmarried girl under the apprehension that she was pregnant.

(4.) It may be a uterine fibroid, which has been growing for a year, and such a tumor would produce very much the same symptoms as we have present in this case.

(5.) It may be a solid ovarian tumor; and, *lastly*, it may be an ovarian cyst or dropsy.

There are a few other conditions which might cause enlargement of the abdomen, such as cancerous affection of a portion of the omentum, hydatids of the liver, etc.; but such cases are so rare that I deem it hardly necessary to mention them in connection with this case. Ordinary enlargement of the liver and spleen could hardly lead into error, if existing alone; but they might do so if they existed in connection with ascites. What we wish to study now, however, is the conditions which might produce just this kind of protuberant, symmetrical enlargement of the abdomen, and ordinary enlargement of the spleen and and liver do not do this.

Let us now return and consider, *seriatim*, the causes which have been written upon the blackboard.

(1.) If this tumor is due to tympanites we shall obtain a resonant sound upon percussion. The percussion note in this case is dull. An additional precaution, however, is necessary; for in those phantom tumors of which I spoke a few moments ago there is sometimes such a rigidity of the muscles, produced by contraction, that the resonance upon percussion can scarcely be obtained. Under such circumstances the administration of an anæsthetic will dissolve the tumor and your diagnosis will be made at once.

(2.) If this is due to ascites, depending upon cirrhosis of the liver, the liver will be diminished in size, the intestines will be upon the surface of the fluid, and there will be resonance upon percussion over the surface of the tumor, above the level of the fluid. We have, however, just determined that there is dulness over the surface of this tumor upon percussion. Again, if this were ascites, we could, by palpation, get the sensation of a wave communicated to the hand through the abdominal walls; but nothing of this kind can be obtained here. The age and appearance of the woman are both against cirrhosis, the liver is not diminished in size, (this being in a great majority of cases the cause of ascites,) and we may therefore safely exclude that cause for this enlargement.

(3.) We can exclude utero-gestation in this case at once, for the following reasons: The uterus is of normal size, and there are no signs whatever of the presence of a fœtus upon auscultation. Many a practitioner has made an error upon this point of differentiation simply because he has not taken sufficient care in making out his diagnosis, and the result of such an error you can easily appreciate. There is one way to determine whether utero-gestation is present or not in such a case as this, which is very simple and very satisfactory. Dip the hands in ice-cold water, and immediately lay them upon the surface of the abdomen, and within a period of time varying from five to thirty minutes your senses will convince you, unless life has become extinct in the fœtus.

(4.) This tumor is not a uterine-fibroid, because it is not solid.

You determine whether it is solid or not in just the same way you would determine whether any inanimate object is solid or not—rely upon your senses. Perhaps, however, you may be a little in doubt, and if you are, do what has been done in the case before us now: tap the tumor with an ordinary hypodermic syringe, and draw out some of the fluid, if any fluid is present. The operation is almost painless, is harmless, and is a most excellent adjuvant in making out a diagnosis. In this case we have drawn out a clear fluid, like Croton water, and we may safely exclude the uterine-fibroid.

(5.) This tumor is not a solid tumor of the ovary, because it has just been determined that it contained fluid. In the manner in which we have proceeded with our investigation, it will be seen that the only cause left which would produce such an enlargement of the abdomen as we have here, is ovarian cyst, or dropsy. With proper care in examination, it could hardly be possible to make errors in diagnosis with regard to enlargements of the liver and spleen, even though they be associated with ascites; yet they may lead into error, and so will the conditions which have been mentioned as probable causes, when proper care is not taken. This tumor is probably not due to hydatids, because the character of the fluid obtained by tapping is not that of a hydatid cyst.

Her appearance clearly indicates that she has no malignant disease.

We come now to look for the positive signs that we have to deal with in a case of ovarian dropsy.

There are no intestines over this tumor, because the ovarian tumor rises up and pushes them away. The resonance therefore will be obtained upon the sides of the tumor.

The fluid drawn is another reason for believing it to be an ovarian cyst, and that makes the diagnosis complete.

Prognosis.—From 6 to 8 out of 10 such cases as this are cured. This proposition, however, represents no man's experience in connection with ovarian tumors, unless he has had this class of cases to deal with exclusively. The favorableness of prognosis in this case is based upon the rapidity of its growth, the clear water-like contents, and the trifling effect that it has had upon the patient's general health.

The treatment is summed up in one word, and that is ovariotomy. Paracentesis is not advisable, for a large number die as a result of the operation. When an ovarian cyst is tapped, two openings are made, one through the peritoneum and the other through the walls of the cyst; the result of that is that some of the fluid may, and probably will, flow out of the cyst into the peritoneal cavity, and give rise to peritonitis, or septicæmia. It is the formation of this *double opening* that constitutes the essential difference between the tapping of an ovarian cyst, and tapping for the removal of fluid accumulated in the abdominal cavity from other causes.

This, gentlemen, is the method I pursue in the examination of every case of abdominal tumor I am called upon to examine, and I believe you will find it of practical service in your future careers.

LECTURE OF DEC. 13, 1872.

PRURITUS VULVÆ.

The first case I show you to-day, gentlemen, is that of Mrs. A——, æt. 40, married, but never been pregnant. During the last summer she says that she had a severe itching about the private parts, which annoyed her very much indeed. During the last two months it has increased very much, and for a week past she has felt it worse than ever. This woman has pruritus vulvæ, and she is very much annoyed at the present time—so much so that she has come to us for relief. You may wonder what the special interest of this subject is. In practice you will find that it is one of the most annoying diseases you will meet with, both for the patient and physician. The first thing I must say is, never look upon pruritus vulvæ as a disease, but endeavor to find out what the cause is that produces it. Your course should always be to ask yourself the question, what is the condition which produces the pruritus? In other words, seek the root of the evil. This case beautifully illustrates the position I have taken, as you will see in the progress of the clinic.

Some three or four years ago, a patient appeared in this clinic, who presented but one solitary symptom, and that symptom was pruritus vulvæ. That woman looked haggard, wild, very much emaciated, and had the appearance of a woman suffering from delirium tremens. She had been so excessively annoyed by her trouble, suffered from such loss of sleep, that she was obliged to use opium in enormous quantities to allay her sufferings, and this in turn had made a complete wreck of her nervous system. Among the causes which may produce the disease, one was found in her case, which I will mention in connection with this. The woman was suffering from diabetes mellitus. The saccharine fluid pouring over the parts was the cause of the irritation. There was the cause of the pruritus vulvæ in her case, and it is not an infrequent cause of the trouble. That case also illustrates the importance of looking most carefully for the cause. In the first place, *pruritus vulvæ* very rarely exists as a nervous disease. In some works upon gynæcology you will find it laid down that it is due to an irritation of the extremities of the nerves distributed to the vulvæ. I am not prepared to deny the statement, but I am prepared to make the counter-statement that I have never seen such a case of nervous irritation alone. I feel that I can not be too particular in impressing upon you the importance of looking as deeply as possible into the subject of etiology in connection with these cases.

You might recommend some ointment or wash, or stereotyped prescription from some work upon diseases of women; but it would be a very superficial manner of dealing with the case. The only true method of management is to first seek the cause. I believe that pruritus vulvæ is usually excited by the presence of some ichorous discharge in the lower part of the vagina, and this discharge so excoriates the vulvæ, and sets up such an itching, that the patient may do a great deal of damage to herself in a short time by scratching. In a great majority of cases, I repeat, it is dependent upon an ichorous discharge in the vagina, and hence a leucorrhœal discharge may be, and is a very frequent cause. But it is not the only cause. It is very often found to occur from cervical endometritis, in consequence of the ichorous discharge which comes from the cervical canal and pours out over the parts. Very often it depends upon some abnormal growth in the vagina, which creates a discharge that flows directly over the vulvæ and keeps up the irritation and itching.

The very desire to scratch makes the disease worse, and when the scratching has gone on for a short time, an eruption will be found which will make the case still worse, and still more sensitive to the exciting cause.

The pediculus pubis is another cause, and, upon close examination, perhaps a little pediculus may be found at the root of each hair. Remove one of the parasites, and you will have the whole case in your hand at once; but it would be quite wrong to call it a case of pruritus vulvæ simply. Nor should mercurial ointment be recorded as one of the remedies for pruritus vulvæ because it cures the disease under such circumstances. It cures when pediculi are the cause, but it would not cure the case we have before us now, nor a case dependent upon an ichorous discharge pouring over the vulva.

The main thing I wish to have understood, is that before you institute a plan of treatment for pruritus vulvæ, you are to look carefully for the cause, or the condition which produces it. Do not look into some work upon gynæcology, and get some pet prescription, imagining that you are dealing with the case in a rational manner. But carefully study the etiology of every case. Acting upon this principle, I find in this case that the vulva is bathed with a thick and ichorous-looking mucus. It is that kind of mucus which comes from the vagina in a low grade of inflammation.

The result of physical examination in this case is the following. A pedunculated polypus about an inch in diameter is found directly in the mouth of the uterus. This has given rise to an ichorous leucorrhœa which is the general cause of the pruritus; but it is the polypus that keeps up this ichorous discharge by its irritation of the vagina, and this is the source of both the pruritus vulvæ and the ichorous leucorrhœa. But, you may ask, why does this ichorous leucorrhœa produce pruritus in this woman, and not in others? I will answer the question in this way: that a majority of women have pruritus who have leucorrhœa, but they will almost never make this statement to the physician unless their attention is particularly drawn to it by his questions.

The patient was then placed upon her back, and the polypus removed by simply twisting it off with the forceps.

This polypus is what is called the glandular polypus, and contains a honey-like material which consists of the secretion of the Nabothian follicles. One of the little glands or follicles in the cervical canal begins to grow, is filled with a honey-like material, becomes a large cyst, hangs down into the vagina, and becomes a polypus. Without doubt this removal of the polypus will cure the pruritus vulvæ; but if you are particular about removing it rapidly, some wash may be used for the vagina, and some external applications made.

CANCER OF THE BODY OF THE UTERUS.

Mrs. W——, æt. 40, widow. Has had one child and two abortions. Her last pregnancy occurred about ten years ago. Was in good health up to three years ago, when she had profuse flooding. At irregular intervals since, she has had similar attacks accompanied by pains in the back and womb. Several months after, an examination was made and the uterus was found in a state of retroflexion, but not enlarged, and the intravaginal portion presenting a healthy appearance. Examination of the interior of the uterus, however, with a sound and curette, discovered a fungous degeneration of the uterine mucous membrane. The treatment at that time consisted in a gentle but thorough scraping of the whole inner surface of the uterus with a blunt-edged curette, but that treatment failed to effect a cure. During the last two months the patient says she has never been dry, having a constant watery discharge from the vagina, which at times is tinged with blood. Almost every day during that time she has passed a period of two hours suffering most agonizing pains, which she says can be compared to nothing except the pains of childbirth. Notwithstanding this continuous discharge and these frequently repeated agonizing pains, she thinks her general health has been improving during the last two months. The patient, however, looks anæmic and cachectic. Her complexion has a pale, yellowish hue, slightly tinged with green. Physical examination to-day gives the same results as when examined before, and the diagnosis is fungous degeneration of the uterine mucous membrane, which from its appearance and persistent nature would lead us to suspect the existence of malignant disease. This patient will enter the hospital, when a complete investigation of her case can be made.

Dec. 6.—The examination of this case was completed as follows: the uterus was rapidly dilated by means of sponge-tents, and when dilated sufficiently, something like a polypus was felt by the finger upon the inside of the cavity. A scoop was used, and the whole mass removed, which was found to be very soft and friable. The mass was sent to Dr. F. Delafield, of this city, for microscopical examination, and the report is that it has the ordinary appearance of uterine cancer, which consists of a fibrous structure having irregular cavities closely packed with large nucleated cells. This mass has been entirely removed by gently scraping the cavity, and the patient is entirely relieved of the symptom which was so annoying and threatening to her life. So much relief has she received from the simple procedure of scraping the cavity, that she could hardly bring herself to believe that she is the subject of a malignant disease of the uterus. Physicians often appear inclined to believe that there is no such thing as cancer of the body of the uterus, but it is well that you should never decide until you *examine* the cavity of the body. It is not common. This is the sixth case I have met with in an experience extending over twenty years. Cancer of the neck of the uterus is very common, and runs its course very rapidly. What is the prognosis in this case? This patient may go on for two or three years. This has been my experience in cases of cancer within the body, and this case will probably run the course which other cases have run. Some of them last for six or eight years, but this is not the rule. In this case immense relief has been given by treating a symptom. Had not the inside of this woman's uterus been scraped out, she would have died from the hemorrhage, but not from cancer.

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

REPORTED BY JAMES V. INGHAM, M.D., SECRETARY.

STATED MEETING, SEPT. 5, 1872. DR. WILLIAM GOODELL, PRESIDENT, IN THE CHAIR.

UTERINE POLYPUS—CYSTIC TUMOR OF LABIUM.

DR. J. H. PACKARD exhibited a polypus of the uterus, which he had removed a few days previously. The patient had been under his care for some time for a leucorrhœa, and, after several days of unavailing treatment by astringent injections, he made a careful examination, and discovered the polypus. The woman had recently been confined, yet nothing had occurred during either gestation or labor to lead to a suspicion of its existence. It was easily removed with the wire écraseur of Dr. Braxton Hicks, and was little larger than an egg. He also exhibited a cystic tumor removed from the labium of a colored woman. It had existed for two years, and during that time had been mistaken for a hernia by another physician, who had twice apparently reduced it. The disappearance of the tumor was most probably due to a rupture of the walls of the cyst, and a diffusion of its contents into the surrounding tissues. The incision for its extraction was made on the outside of the labium, as being less liable to hemorrhage and to injury to the cicatrix during future labors. The removal was readily effected, and the hemorrhage was controlled by pressure and the persulphate of iron. He did not think that there should be any difficulty in diagnosing these cystic growths from hernia, especially as the tumor could be perfectly isolated.

DR. WILLIAM F. JENKS mentioned two cases of tumors caused by the closing of the ducts of the glands of Bartholine. He thought, however, that the specimen exhibited by Dr. Packard was very different in its pathology. He called the attention of the society to the fact that there were in the labia a row of glands without any excretory ducts, and he believed that these cystic tumors found their origin in these glands. He then referred to several cases mentioned by McClintock, and also to one noted by Pelletin, that was mistaken by many for hernia.

POLYPUS COMPLICATING PREGNANCY.

Dr. H. Williams mentioned a case under his care, of a woman aged 32, in the third month of gestation, with a small polypus protruding from the cervix, causing a slight hemorrhage after any exertion, and if the exertion is prolonged the hemorrhage becomes excessive. He asked the Society for information concerning the advisability of removal.

Dr. J. H. Packard did not think that at present an operation was indicated.

Dr. William Goodell referred Dr. Williams to an article in the London *Lancet* for August, 1872, in which this subject was treated in detail. He, Dr. Goodell, would wait until after the fourth month of gestation, and then would certainly remove it. Some time ago he delivered a woman in whose uterus there was a large polypus. The labor was uncomplicated, but was followed by hemorrhage; this was, however, controlled by large doses of ergot until the eighth day after delivery, when the hemorrhage returned and the polypus was discovered. She left the hospital and returned home, but died after five weeks from pyæmia.

Dr. William F. Jenks reported a case of congenital craniotabes, occurring in the wards of the Philadelphia Hospital, death resulting from eclampsia on the fifth day.

The labor was unusually rapid, scarcely ten minutes being required, after dilatation of the os uteri, to complete delivery, although the woman was a primipara and the perineum was quite rigid. On examination, the parietal bones were found to be exceedingly thin, yielding like parchment under pressure, so that the head could be readily wire-drawn or moulded. The occiput was the seat of four membranous spots, situated near the lambdoidal suture. The child nursed well, and, although small, remained well until the fourth day after birth, when spasmodic movements of the limbs were first noticed; these culminated in eclamptic spasms, recurring at first every two hours, but finally becoming continuous and resulting in the death of the child eighteen hours after the first attack. The longitudinal and transverse sinuses of the brain were filled with dark clots, the membranes were congested; the cerebral substance was, however, in general pale and anæmic, but numerous rosy-tinted, softened patches of encephalitis were found, more especially in that portion of the brain situated along the sides of the lateral ventricles. Under the microscope, Gluge's exudation corpuscles were found to be numerous, and the capillary vessels were dilated and varicose. He also reported another case in which the membranous spots, three in number, were situated along the sagittal suture, the occipital bone being ossified to an exceptional degree; the child weighed 8¾ lbs., and after a tedious labor was delivered by the forceps. Death took place the second day after delivery, with partial convulsions affecting the right side of the face and body; the cerebral membranes were congested, but the brain on section appeared pale, and no evidences of local encephalitis could be found.

STATED MEETING, NOV. 7TH, 1872. DR. J. L. LUDLOW, VICE-PRESIDENT, IN THE CHAIR.

DR. A. H. SMITH exhibited a specimen of parametritis. The woman, aged 33, had been sent to him from Easton, and when he saw her on the 10th of June last, she was greatly emaciated, with a haggard, worn expression, the skin was yellow, her appetite was poor. She was suffering great pain in the right lumbar and ovarian region; there was no hemorrhage, no discharge from the vagina; had great difficulty in urinating, and was obstinately constipated. On making a vaginal examination, he found a solid mass forming a complete roof to the pelvis, of a firm, unyielding character; the os uteri was situated about in the centre of the tumor, was open, and was apparently free from disease.

She continued in this condition without much change, except at times suffering from severe paroxysms of pain in the right lumbar region, until the first of September, when all the symptoms became more severe; the pain became almost constant; urination became first extremely difficult, attended with great tenesmus, and at last impossible, necessitating the constant use of the catheter to draw off the highly ammoniacal urine; the constipation grew more obstinate, and was only relieved by large saline laxatives, producing a copious watery discharge. About the middle of September, she became almost maniacal, having frequent hysterical paroxysms; these increased in severity until they closely resembled attacks of mania a potû. She was always in a terrible fright; apprehended injury from her relatives, who were exceedingly kind to her, but whose presence she could not tolerate. This condition was soon followed by a stupor from which she never rallied, and two weeks ago she died.

From the commencement of the disease she had never suffered from uterine hemorrhage. The menstruation, although regular, was sometimes prolonged, but was never excessive. For ten days preceding her death she had taken no solid food, and had had no evacuation from the bowels, having rejected both from the stomach and rectum all laxative medicine.

Some years ago, she was under the care of Dr. Allen for tertiary syphilis, but from which she had apparently entirely recovered. At the post-mortem examination, the walls of the uterus were found to be indurated, the ureters were distended, and the connective tissue of the pelvis was generally infiltrated; the uterus was firmly adherent to the sacrum.

Dr. J. S. Parry moved that this specimen be referred to a special committee for microscopic examination, to report at the next meeting. Drs. Parry, Jenks, and A. H. Smith were then appointed for this committee.

Dr. R. G. Curtin read the following history of

A CASE OF OVARIOTOMY,

and presented a post-mortem specimen.

B. C——, æt. 44, a short, rather slender Englishwoman, who had resided in Philadelphia for the last six years. She had always been rugged and healthy. She menstruated at thirteen, and had been regular ever since, except while bearing children. She had three grandchildren, her two daughters and herself having given birth to children at or before the age of twenty. She was married at eighteen, and had seven children and two miscarriages. One miscarriage occurred seven years ago, and one year later she gave birth to a child at term; the second miscarriage occurred about two and one half years before the operation. About eleven years ago, she first noticed an abdominal enlargement, and about the same time a tumor was discovered occupying a central position. The tumor grew slowly and steadily until her last miscarriage, (two and one half years ago,) at which time it was about half the size of a pregnant uterus at term. Subsequently it increased in size more rapidly. She menstruated regularly during the growth of the tumor, but somewhat more copiously than usual. Two years before the operation, the tumor was examined carefully by Drs. Curtin and Jenks, and the following conditions were found: The tumor was larger than a uterus at term, and pyriform in shape; its position was central. The wave on percussion traversed its whole extent. The superficial veins of the abdomen were somewhat enlarged. On digital examination, the vagina at the right side of the uterus was found to be pushed down. The sound passed two and one half inches. She was tapped seven times between the first of September, 1870, and the second of April, 1872, a period of nineteen months. About three and one half gallons were evacuated at each tapping.

On Monday, May 27th, 1872, the operation was performed with the assistance of Drs. D. Hayes Agnew, Mears, Jenks, and Allis. The incision was but one and a half inches in length. The contents of the cyst were evacuated by Dr. Mears's trochar, after which the tumor was easily drawn out through the small incision. There was found an adhesion to the omentum, about two inches in extent. The pedicle was long, narrow, compact, and entirely free from adhesions. This was secured by Dr. Atlee's clamp, and dressed in the usual way. On the first day, the patient did well, vomiting only occasionally; but on the second day this vomiting increased in frequency, the ejecta being *very offensive*, her skin became hot and dry, and her pulse went up to 118. On the third day, the vomiting still increased, and so did the fœtor of the dark, grumous ejecta. All the ordinary remedies by the mouth failed to arrest the vomiting, but at the end of the third day it was promptly checked by giving hypodermically a full dose of morphia, and by feeding and stimulating her by the rectum; nothing whatever was given by the mouth. Her menses appeared at the end of the third day, (a week in advance of the usual time.) Every thing went on nicely from this time until the end of the second week. The clamp came off on the sixth day. On the fourteenth day, she had a desire to go to stool, and, during the absence of the nurse, she got out of bed and used the chamber several times, straining each time violently. Three days after this, she said there was a soreness on the posterior part of the thigh, and on examination there was found a small tumefaction midway between the pelvis and knee. The pulse was not accelerated, nor were there any constitutional symptoms. She stated that she had injured her thigh in rising from the bed. The tumefaction grew larger, and a well-marked phlebitis ensued, followed by an infiltration of the subcutaneous connective tissue, resulting in the formation of a large abscess on the posterior part of the thigh. On the 24th day, the abscess was opened, and three ounces of laudable pus were evacuated. The next day a train of the gravest symptoms presented themselves, such as delirium, subsultus tendinum, involuntary stools, picking at the bed-clothes, tongue dry and brown, sordes on teeth, pulse 140. These alarming symptoms in about four days subsided under tonics, stimulants, and nourishment, so that at the end of the fourth week her pulse was 100, tongue moist and almost clean, skin cool and moist, appetite good, mind clear. She gained flesh and strength rapidly after this, and seemed in a fair way to recover. The weather becoming intensely hot, and the atmosphere of her room (which was small and directly under a tarred roof) being stifling and oppressive, she sank with exhaustion from the heat, dying at the end of the fifth week after the operation. Those with her stated that the temperature of the body increased for several hours after death.

Autopsy forty-eight hours after death. The weather was exceedingly hot. There was some post-mortem discoloration of the body. The *heart* and *liver* were healthy. The posterior parts of the *lungs* were congested, but otherwise healthy. The *abdominal cavity* was entirely free from evidences of inflammation, except where the pedicle and omentum were adherent to the edges of the incision. The union there was perfect. The pedicle long and free. The *intestines* were perfectly healthy. No change was discovered in Peyer's patches or the mesenteric glands. No evidence of pelvic inflammation was seen. The *uterus* was enlarged, and the mucous membrane congested. These conditions could be easily accounted for by the fact that it was about time for her menses. The left *ovary* was normal. The *blood* was fluid and of a purplish hue; when submitted to a microscopical examination, the white corpuscles appeared in excess—otherwise it was normal.

Dr. J. S. Parry exhibited for Dr. E. L. Duer,

A Specimen of Cancer of the Uterus.

The patient had been recently admitted into the wards of the Philadelphia Hospital, and died before any examination was made. On admission she was saturated with a strong, sweetish, urinous odor, and was in a condition of partial hebetude, giving rise to a suspicion of uræmic poisoning.

On making the autopsy, extensive disease was found involving and destroying almost all of the uterus. The walls of the bladder were greatly ulcerated, and an extensive vesico-vaginal fistula had been created. The rectum was also extensively diseased, but had not opened into the vagina. The ureters were distended, the pelves of the kidneys enlarged, and the body of the kidney was atrophied. Dr. Parry thought that the patient had died from uræmic poisoning, and believed that this illustrated a frequent mode of death in these cases.

Dr. C. H. Thomas referred to a somewhat similar case, which came under his notice about six years ago. This patient had been seen and treated by several of the leading physicians of this city, who had all concurred in the diagnosis of cauliflower cancer of the cervix uteri, and had given an unfavorable prognosis. The history was one of great suffering and of repeated profuse hemorrhages. When she came under Dr. Thomas's care he refused to give a prognosis, more from sympathy with the feelings of the patient than from any doubt concerning it. He used glycerole of tannin applied on a pledget of cotton, and was greatly surprised after four weeks of treatment to see the improvement. The hemorrhages, which had been very great, entirely ceased. The almost complete occlusion of the bowel that had previously existed disappeared, and her general condition was quite good. The improvement continued, and a late examination did not reveal any traces of her former disease. The previous treatment by caustics had always caused frightful hemorrhages.

Dr. J. L. Ludlow doubted the correctness of the diagnosis, and mentioned a case in which a tumor of the cervix had been mistaken for cancer. The patient was treated with local applications of iodine, and recovered. He also mentioned another case, in which a so-called cancer had been cured by creasote and rose-water. He doubted the existence of cancer, unless diagnosticated by the microscope, and believed that cancer can not be cured in this way. As regards Dr. Parry's case, he thought it was well treated, but believed that the relief would prove only temporary. He called attention to the hysterical symptoms existing in the case narrated by Dr. A. H. Smith, in connection with adhesions to the sacrum, and stated that he had seen the same symptoms arising from pressure on the sacral nerves.

Dr. R. G. Curtin doubted the existence of cancer in Dr. Thomas's case, and mentioned a case in which several physicians had been puzzled to decide between the existence of a cancerous or specific disease, the latter finally proving to have been the trouble.

Dr. J. S. Parry doubted the power of glycerole of tannin to cure cancer, and mentioned a case of condylomata which clearly resembled a cauliflower growth.

Dr. J. L. Ludlow believed that tannin was very useful in arresting hemorrhages, as it often proved more efficacious than the persulphate of iron, and cited a case of cancer of the breast in illustration.

Dr. A. H. Smith believed that the true condition had been one of simple vegetations growing from the cervix, and stated that he had seen analogous cases, though not so extensive. He did not believe that cancer could be cured; it will return if removed.

Dr. J. G. Allen remembered the case cited by Dr. Thomas. She had been under his care for some time; when she left him there was a protrusion from the cervix closely resembling a cauliflower growth. He also had his doubts about her freedom from disease now, and certainly believed that she would ultimately die from cancer of the uterus.

Dr. A. H. Smith reported the following

Accident Occurring in the Induction of Premature Labor.

He was lately called to see a woman aged 32, who eight years ago had been delivered naturally of her first child. Up to the fourth month of this her second pregnancy, she had been apparently perfectly healthy. The urine then became albuminous, and despite the most active treatment the amount of albumen constantly increased. When he saw her on July 23d, she was in a pitiable condition; her face, hands, and lower extremities were extremely œdematous, with great mental hebetude, and the urine was almost solidified by heat. The day before, she had apparently collapsed, the pulse running up to 180, with very feeble and irregular respirations, and every symptom of uræmic poisoning. He believed that she was suffering from a slight heart-clot in addition to the albuminuria, and deemed it necessary to deliver her at once, she then being about 5½ months advanced in pregnancy. Dr. A. Stillé confirmed the diagnosis of heart-clot, and indorsed the proposed treatment. As her condition was too low for etherization, and the pain from slow dilatation of the cervix too great to be borne without it, it was deemed advisable to puncture the membranes and allow the waters to drain off slowly. The sound passed easily from 4–5 inches; the membranes were ruptured and the waters gradually drained away. The next day she seemed much better, the uterus was smaller, skin warmer, pulse less frequent, more regular, and she had less dyspnœa. Had passed a large amount of water from the uterus during the night: it was slightly stained with blood. During the afternoon she became worse, and in the evening had a profuse hemorrhage; the os was found patulous, about the size of a 25-cent piece, and the placenta presenting. The hemorrhage was profuse; but, having no dilators with him, and thinking it useless to tampon the vagina, he proceeded to forcibly deliver. As ether could not be used on account of the heart-clot, the operation was a frightful one, the patient shrinking and violently resisting. The placenta was at last with great difficulty detached from the uterus, and the head seized, but it came away in his hand; the body being afterward delivered, the uterus emptied and contracted. In a few minutes the patient reacted, the skin became warmer, the pulse stronger, and the intellect brighter; but at the end of two hours she sank in a collapse and died, without, however, any return of the hemorrhage.

The doctor then called attention to the danger that would always ensue when unrecognized placenta previa occurs to complicate the induction of premature labor. He believed that the patient died, not from the hemorrhage, but from the previous depression, heart-clot, and shock.

Dr. J. L. Ludlow remarked that he had seen a case of craniotomy in which the woman never reacted, and died seven days after the operation. There was no fever; only inability to react.

STATED MEETING, DECEMBER 5, 1872. DR. WILLIAM GOODELL, PRESIDENT, IN THE CHAIR.

Dr. J. L. Ludlow exhibited

AN OVARIAN CYST

taken from a nullipara aged 35, who lately died in his ward at the Philadelphia Hospital. There was no history of syphilis; the woman died from valvular disease of the heart, acute pneumonia, and fatty degeneration of the liver and kidneys. The cyst involved the entire left ovary, and contained 18 ounces of pale albuminous fluid, which, when examined microscopically, was found to contain pus and blood-corpuscles, oil-granules, and cholesterine crystals.

Dr. W. F. Jenks exhibited a specimen of pelvic peritonitis. The uterus was bound down by fibrous bands; the left ovary was enveloped in the products of inflammation with dropsy of the left Fallopian tube.

Dr. J. L. Ludlow thought that the specimen was very instructive, as showing how futile it often was to attempt to restore a displaced uterus, when so fastened in its abnormal position.

Dr. Dyer was interested in the flexed condition of the uterus, but found it difficult to understand how it could be produced by perimetritis alone, without endometritis; would like to ask if this retroflexion is regarded as a direct result from perimetritis

Dr. W. F. Jenks believed that in cases of flexion associated with chronic metritis, the latter is always an antecedent condition.

Dr. J. V. Ingham exhibited a

UTERUS AND FŒTUS IN THE SIXTH MONTH,

with the following history.

Mary McC——, aged 30, six months gone in her third pregnancy, was admitted to the Obstetric out-wards of the Philadelphia Hospital on November 9th, 1872. About two weeks before her admission, she took cold while washing clothes, and soon after her feet and legs commenced to swell. Before that time, she had been quite well; the œdema of the feet and legs increasing, she was transferred to the Diseases of Women's ward on the 18th of November, and then came under Dr. Ingham's care. The feet and legs were then greatly swollen, and the abdominal walls pitted readily on pressure. The uterus extended to the umbilicus, and the existence of pregnancy was apparent to all. Her face, although flushed, had a pinched and exhausted expression; her pulse was rapid and feeble, and her general condition was one of great depression. The urine, although examined three times, did not yield any traces of albumen; it was moderate in amount, and at times dribbled from the urethra. She was at once given tonics and diuretics, and carefully watched, as eclamptic spasms were dreaded. Treatment and watching were, however, of no avail, for early in the morning of November 26th she rapidly aborted, the fœtus and placenta being completely delivered before the house-resident could reach the ward. There was no after-hemorrhage; but, when seen by Dr. Ingham at 10 o'clock, 7 hours later, she was feeble, with a weak thready pulse, and a rather rapid respiration; with the exception of a few coarse râles heard over the upper part of the right lung, there seemed to be nothing the matter but debility. Whisky and quinia were ordered; but a few hours later she rapidly became worse, and at 11 o'clock of the same evening she died. The autopsy was made the next morning, 32 hours after the miscarriage and 12 hours after death. The brain was pale and apparently softened; the lungs were somewhat congested, but were free from any consolidation or pleuritic adhesions. The heart, liver, and kidneys were exceedingly fatty. The uterus contained the decidua, which had undergone extensive fatty degeneration.

The doctor then presented the specimens. The fœtus was 13 inches long, and had, therefore, according to Caspar, completed the sixth lunar month. This accorded with the mother's statement that she was six months gone. The placenta clearly exhibited the cause of the miscarriage, for it had undergone marked and extensive fatty degeneration, and about one inch of its periphery had lost half its thickness by absorption.

The uterus, laid open on its anterior surface, was seen to contain the decidua, which was still attached to the uterine walls. It did not, however, enter the cervix, but terminated sharply at the inner side of the os internum. The cervix uteri was 2½ inches long, but the vaginal portion had been reduced to a mere ring ¼ of an inch in thickness. The doctor called the attention of the

Society to the great elongation of the cervix at this stage of gestation. He believed that this condition was first noted by Dr. Isaac E. Taylor, of New-York, in a paper on Placenta Previa, published some years ago. The specimen illustrated very clearly Dr. Taylor's views on the attachment of the placenta, for the decidua did not enter the cavity of the cervix uteri. It also explained how the passage of the sound in unsuspected pregnancy often fails to produce an abortion, for it could in this case have been passed 2½ inches without either puncturing the membrane or entering the cavity of the uterus. He also thought that this shortened condition of the vaginal portion of the cervix uteri was of interest, as it had deceived many and led them to suppose that the entire cervix was shortened, among others, Dr. Atlee of this city, who in his recent work on ovariotomy states that, examining a woman who was sent to him for an abdominal tumor, he found "the cervix shortened, softened, and expanded." The patient was delivered three months later at term, so that, when examined by Dr. Atlee, she was in the sixth month of pregnancy, and her uterus was in the same stage of development as the one now exhibited, in which it was impossible to say that the cervix was either shortened or had been expanded.

Dr. A. H. Smith asked if there was any evidence of syphilis?

Dr. Ingham replied that he had been unable to detect any.

Dr. J. G. Allen thought that this was an interesting point, and gave the history of a patient of his, who had had syphilis. He was married three times; the first wife aborted once, and died before a second conception; the second wife was never pregnant; the third wife aborted seven times in succession; the use of anti-syphilitic remedies enabled her to carry the eighth child to term; it was born alive, but died when eight months old.

The President remarked that he believed not only in the stability of the cervix during gestation, but also in an appreciable hypertrophy of it which persisted until removed by the process of involution. That the apparent shortening of the cervix was an illusion, produced partly by the upward traction on the vagina by the womb as it rises up out of the pelvic cavity, and partly by the limitation of the hypertrophic elongation to the supra-vaginal portion. Yet, he was not prepared to admit that in gestation the standard length of the cervix was as great as two and half inches. The extreme length of the cervix in Dr. Ingham's specimen he thought could be attributed to the process of labor. Immediately after a premature labor or after one at term, however short the process, the cervix will always be found in a flaccid condition. It hangs down loosely like a skirt gathered up at the internal os. Its length, under these circumstances, is rarely, if ever, under two inches; but hitherto, he had attributed this gain, not so much to the hypertrophic elongation as to the stretching of the canal by the passage of the fœtus, and to the temporary paralysis of its tissues; that it took several hours, and sometimes days, for the cervix to regain its vital contractility; and that, in Dr. Ingham's patient, death had taken place probably before the cervix had recovered from this condition of paralysis.

Dr. A. H. Smith bore witness to the accuracy of Dr. Goodell's statement. He deemed the flaccid and fringe-like cervix to be the natural condition after labor, provided the womb has been wholly emptied. So impressed was he with the importance of this as a diagnostic point, that, for a number of years, he had taught his classes to be guided in abortions by the following rules: Whenever the cervix is found flaccid and flaring out like a funnel, the uterine cavity may unhesitatingly be considered empty. On the other hand, whenever the cervix remains firm and conical, or somewhat cylindrical, the inference is positive that some shred of membrane or a small fragment of placenta has not yet been expelled.

The President related the history of a case of

ADHERENT PLACENTA AND PARAMETRITIS IN A COW.

She had calved without any difficulty, but did not—in the language of the dairy—"clean herself." In other words, the placenta was not cast. For nine days she was "cleaning herself;" but the fragments of placenta thus expelled were so putrid as to poison the air of the stable, and to compel the free use of carbolic acid. She was now seized with a chill, had a high fever and sweated profusely. She refused to eat, rarely got up on her feet, and soon lost her milk. In the third week an abscess pointed and burst in the left flank, discharging a very large amount of pus. After this, she rapidly failed, and on the 27th day died. While the hostler was crowding her body into a pit, he stepped upon the right flank. Under his weight the skin broke, and a thick stream of pus gushed up over his person. Dr. Goodell thought that this case was an instructive one, in so far as it showed the liability of the lower animals to some of the child-bed accidents of the human female.

Dr. William F. Jenks, read the following reports from the Committee on Microscopic Examination:

CASE REPORTED IN THE TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY FOR MAY, 1871, IN THE "AMERICAN JOURNAL OF OBSTETRICS," AUGUST, 1871.

Congenital Hydromeningocele and Cephalæmatoma.

Your committee would respectfully report that they have examined the congenital tumor of the head referred to them, and found that there existed a growth about the size of an orange, attached to the lower portion of the occipital bone, near the foramen magnum. The bone was perforated at this point, an opening thus being formed which would admit the point of the little finger, through which there protruded internally the torn membranes. The tumor itself was covered with the hairy scalp, which in the lower portion seemed more resistant and thicker than elsewhere; but which gave everywhere a sense of fluctuation. On opening the sac it was found to be filled with a sanguineous fluid, in which there floated larger and smaller coagula. On closer examination it was found, moreover, to be composite in character, consisting of three cavities—the smallest of which, elliptical in shape, was situated in the scalp itself, under the thickened portion, which had been detected before opening the tumor. The inner sac is easily traced to the opening in the bone, through which it passes, its walls being formed by the dura mater meninges; while between this and the integument there existed a space filled with a fluid in which there were numerous partially broken-down coagula of blood.

Your committee would suggest, as the probable mode of formation of this curious and interesting specimen, the occurrence of congenital hydromeningocele, which, passing through the opening in the occipital bone, thus peeled away the pericranium, and caused a hæmatocele, by the rupture of the vessels thus produced. The smaller cyst in the walls of the scalp itself was probably produced by an effusion of blood at the time of delivery, or may have been the result of pressure, as this corresponded to the part of the head on which the child would rest. Respectfully,

W. F. Jenks, M.D.,
J. S. Parry, M.D.,
A. H. Smith, M.D.,
Committee.

Parametritis—Cirrhosis Ovarii—Hydronephrosis—Hydrops Tubæ Fallopii.

Your committee would further report, that on examination of the second specimen referred to them, it was found to consist of the pelvic viscera more or less firmly united together by a mass of inflammatory exudation. The uterus was enlarged and indurated, the walls of the arteries thickened, but no great displacement of the organ had taken place. The right ovary with the corresponding Fallopian tube was firmly bound to the posterior surface of the fundus of the uterus, by sub-peritoneal adhesions. Both ovaries had undergone cirrhotic degeneration, and the Fallopian tubes on both sides were distended with fluid. The broad ligaments on both sides, but specially the right, were thickened; the anterior and posterior layer being separated by a mass of inflamed deposit. The connective tissue between the lower portion of the cervix and vagina was broken down, at several isolated spots, into a pulpy detritus, and a communication, probably post-mortem, existed between one of these foci and the posterior wall of the bladder. The right ureter was pressed upon and constricted by the pelvic deposit, and hydronephrosis existed to a considerable degree. The sigmoid flexure of the gut was very pronounced, and so firmly imbedded and surrounded by the inflammatory product as to form a valve-like obstacle to the passage of the fæces.

Microscopic examination of the tissue taken from the roof of the vagina anteriorly showed that the fibres of the muscular coat were separated widely from one another by a luxuriant growth of connective tissue, which in places was infiltrated with small crenated granular cells, having every appearance of pus-cells in a state of retrograde metamorphosis. Respectfully,

W. F. Jenks, M.D.,
A. H. Smith, M.D.,
J. S. Parry, M.D.,
Committee.

OBITUARY.

James L. Brown, M.D., President of the New-York Obstetrical Society, Physician for Diseases of Women to the Demilt Dispensary; Assistant to the Prof. of Obstetrics and Diseases of Women and Children in the College of Physicians and Surgeons; Member of the New-York Academy of Medicine; of the New-York County Medical Society, etc., etc.

[Contrary to our custom, we give place in this number to the following eulogy. Having known Dr. Brown personally for a long time, we do so with a mournful pleasure; but, aside from all personal feelings, we present these encomiums on his noble character to our readers in the hope that they will feel and appreciate how truly our profession is elevated in the honored name of a single professional brother.—Ed.]

Regular Meeting of the New-York Academy, Feb. 6th, 1873.

The minutes of the last meeting having been read and approved, the President, Dr. Austin Flint, rose, and announced the recent and sudden death of Dr. James L. Brown, whose funeral had taken place on that day. He would not, he said, pronounce a eulogy on Dr. Brown, as he saw present others who, from familiarity with his character and life, were better able to do so.

Dr. T. Gaillard Thomas then made the following remarks:

"I have no doubt, Mr. President, that the sad announcement just made will strike many of the Fellows of the Academy with surprise; I am sure that it fills each and every one with the deepest sorrow and regret. Our comrade who has just left us has not succumbed to a lingering illness, throughout the course of which we have been able to extend to him acts of kindness and sympathy. He has been snatched away from a life of vigor, activity, and usefulness by an overwhelming attack, which ran its fatal course in three days.

"On Thursday last, Dr. Brown attended to his daily avocations. On the following Monday, he lay upon his bed, ill beyond all hope of recovery. To-night, which closes for him a most eventful, and for us a most unfortunate week, he lies cold in his grave.

"I am sure, sir, that his associates whom I see around me would like to know something of his illness and death; and as I was with him during the former, I shall proceed to give them an account of it.

"On Thursday night, a week ago, Dr. Brown returned home from his daily professional round, feeling cold and uncomfortable. He sat himself down to write—perchance the very essay which he was announced to have read here to-night; but he soon threw aside his pen, and rising, said to his wife, 'I am too ill to do any thing, and must go to bed.' He had no sooner retired than he had a violent chill, which was followed by high fever. On the afternoon of the next day, he sent for me to see him. I found him suffering from an agonizing headache and pains in the limbs. He gulped up rather than vomited every few minutes a mouthful of bile. His pulse was 130, his temperature 104½°, and his facies such as to fill me with the gravest anxiety, although I was unable to make a diagnosis. During Saturday nothing new developed, except a stitch in the right side, and the expectoration of a little mucus tinged with blood. On Sunday, a crepitant râle was discovered, apparently at the centre of the right lung, and the respiration became rapid, painful, and labored. On Monday, he was seen with me by Drs. Metcalfe and Peaslee Every hour during the day he became rapidly worse, a tendency to coma developing itself, which toward the afternoon became almost complete. On Monday evening, the crepitant râle, which had existed in the morning over a very limited area, had spread over the whole lung, and on Tuesday, at 10 A.M., he died.

"As I saw the supervention of coma becoming imminent, about 4 P.M. on Monday I asked him what he should like me to do in case I found serious symptoms developing. 'I should like you,' said he, 'to tell me immediately, in order that I might make certain arrangements for my family, whom I am so unfortunate as to leave almost without resources.' I then advised him to do so at once, as I had serious fears that he might become comatose within a few hours. With the utmost calmness he gave me directions as to the disposal of the little property which he was to leave; requested me to appeal to the 'Society for the Relief of the Widows and Orphans of Medical Men' in behalf of his wife and child; made some few allusions to our long friendship, and the scenes through which we had passed together; and without mental disquietude, without apparent anxiety, closed his eyes, and sank into coma—that deep repose which is a foreshadowing of the quieter 'sleep which knows no waking.' After this he spoke but little, and then almost unintelligibly, and lay nearly unconscious until the following morning, when his spirit took its flight.

"At that moment, Mr. President, according to my appreciation of this man's character, there passed away one of the noblest, one of the most upright, one of the purest members of our profession. In the decease of James L. Brown, not only this society, but the profession of medicine met with such a loss as no calling is rich enough in able followers to look upon without concern. To those who are strangers to Dr. Brown's character, this statement may sound exaggerated and born of the enthusiasm which is created by grief for a departed friend. Those who knew him well will sustain it fully, and will indorse me in the statement that I am not following the false maxim, 'Nil mortuis nisi bonum,' but the more philosophical and better one, 'Nil mortuis nisi verum.'

"The features of men's minds differ as widely from each other as do those of their faces. As the physical features are well pronounced and decided in some cases, while in others they merely present types of classes, so is it with the mental. The character of Dr. Brown belonged to the former class. His mental characteristics were so clean-cut, so prominent, so decided, that with those who knew him well there could be no variety of opinion concerning them. First among these stood forth his sturdy, uncompromising, I might almost say rugged honesty and sincerity. A strong adherence to the right, a determined opposition to wrong and injustice, so universally marked him, that many did he alienate by the bold assertion of the one or fearless denunciation of the other. A self-made man himself, a life-long struggler with adverse circumstances, he had no doubt learned, as all such learn, the sharpness of the sting of 'the oppressor's wrong, the proud man's contumely, and the spurns that patient merit of the unworthy takes.' This experience, which makes many men hard, cold, and exacting, seemed to make this one calm in his judgments, cautious in his decisions, and just, not only to strangers and friends, but even to his foes. Next in its clearness shone forth his wonderful thoroughness and fixedness in the performance of duty. To undertake a task was with him to perform it. For over ten years he was my assistant in public and private practice, and without exaggeration I may say that once having entrusted a duty to his keeping, I felt as completely at rest about it as if it had been performed. I always calculated upon his doing it, not only with certainty, but to the very best of his capacity. His private life showed this peculiarity most markedly. In the practice of medicine Dr. Brown did not meet with financial success. The reasons for this I shall not touch upon now. They are all plain and evident. Let this suffice. The point to which I would allude is this—that in spite of this unsuccess, in spite of many burdens which few knew of, this plain, sincere, upright, good man plodded on, performing every duty nobly, and, without fear or favor from men, accomplished the destiny of his life, and met his death, having earned the respect and commanded the admiration of all who watched his career.

"Still another distinguishing peculiarity of Dr. Brown was his utter and entire loyalty to his friends. He appeared to have studied and appropriated to himself the advice of the sage Polonius, 'The friends thou hast and their adoption tried, grapple them to thy soul with hooks of steel.' As is usually the case with men of his cast, he had few friends, but those he loved and cherished with an affection almost romantic.

"Although, Mr. President, my affection for this man has led me to say more than is usually said in a public society, I should be wanting in my duty if I did not say more upon still one topic—his professional character and worth. The loss of James L. Brown to gynæcology is great. He had already attained to a great deal, but still more was yet to come; for he was developing rapidly, although so late in life, for he died at 41. I watched his development year by year, and I know how to appreciate his loss. During the whole of my career as Professor in the College of Physicians and Surgeons, Dr. Brown has been my clinical assistant. In the beginning I found him in his report of cases making frequent errors of diagnosis, a rectification of which he always took meekly and quietly. But year by year I found these growing less and less frequent. Then I found him firmly disputing my own diagnoses; and I call the class of this college to witness that during the past two or three years I have often had to retract a diagnosis disputed by him, and acknowledge before them that he was right and I wrong. His ability as a diagnostician in gynæcology was signal. I know of few among the masters of this art in New-York whom I would place above him.

"But, sir, I must cease to recall the virtues of him who has gone from us, lest my eulogy may be regarded as too glowing as well as too lengthy.

"I would move, sir, that a committee of three be appointed by the chair to draft a series of resolutions expressive of the feelings of the Academy upon the death of our associate."

REMARKS BY DR. W. H. CHAMBERLAIN.

"That which has been said here this evening of Dr. Brown, has been spoken with such fulness of knowledge and such fulness of feeling, by gentlemen who have known him so long and so intimately, that it is perhaps unnecessary to add more. Nor among his many friends here is there reason why I should assume to utter that which is so near to the lips and hearts of all.

"Yet, when on Tuesday I read the fatal announcement in the morning papers, and when reading it again and again, and noting the initials of his name, the number of his years, and the location of his church, I slowly came to believe what at first seemed so incredible. I felt, as doubtless many here have felt, that it would be a pleasure to bring a word of testimony to the nobleness and the value of the life thus suddenly and, to our thinking, thus untimely cut off. Just a week ago on Thursday last, I saw him full of life and the freshness of life in that church vestibule where to-day we have taken our last look on his face in death. The class-book in the Demilt Dispensary shows that he went straight from that marriage festival back to his professional study and work.

"I had known Dr. Brown somewhat intimately for eight years. For that period, day by day alternately, we had kept charge of the class of Diseases of Women at the Demilt Dispensary; week by week had met in societies and often elsewhere.

"This had led me to watch his aims, his methods, and his progress. The quickness of his apprehension, the tenacity, exactness, and readiness of his memory, and the soundness of his judgment, were indeed admirable. But, even more than these, I had noted the constant industry with which he wrought in every field where the knowledge which he sought was to be won. We sometimes speak to each other of bodily and mental exhaustion; but in all these years, while he has been going all the time from dispensary to clinic, and from hospital to society, in care of his own business and in trust with that of others, his vigor seemed never to abate, and his mental brightness seemed never to be dulled or worn. He had held many positions, some subordinate, some of honorable association, and some of prominence and dignity. At the time of his death he was President of the Obstetrical Society, to whose records as Secretary he had for several years given form and prominence.

"Of late, with well-earned confidence in his large experience, he had often spoken on the floor of this Academy and elsewhere, and hardly any man of his years had been listened to with more attention and respect, or had seemed more surely marked for a long life of usefulness and eminence. He has gone from us at the bidding of Him whose thoughts are not as our thoughts; but he has left to us a bright example, an honorable record, and a sense of personal loss which time will diminish, but cannot quite efface."

Remarks by Dr. E. R. Peaslee.

"Mr. President: In adding to the remarks of Dr. Thomas respecting our deceased fellow, Dr. J. L. Brown, I may first and in general say, that physically, intellectually, and morally, Dr. Brown belonged to the highest type of our race. Till within the past few days it had never occurred to me, in my intimate relations with him, that that vigorous manly form was not to live to a good old age. It shrank from no amount of labor imposed upon it, and never seemed to feel exhaustion. His intellect, naturally quick and discriminating, had been thoroughly trained to rigid logical habits of thought, and he therefore had clearly defined views of all the subjects which came before him in professional life. I have never known a physician of his age, I think, who could give a more clear and well-founded opinion on any and every subject within the domain of his special department of gynæcology than he, nor one who could defend his opinions by stronger arguments. The fact that at the time of his death he was President of the Obstetrical Society of this city also shows the appreciation of him in that department, by the members of that Society, who so well knew his acquirements.

"But Dr. Brown was scarcely less familiar with the other branches of medical science and practice than with his own special department. He had prepared himself for a specialty, as every specialist should, by a previous acquaintance with all the branches of our art; and his breadth of view and his thoroughness as a student were illustrated in the first interview I ever had with him. More than ten years ago, he called on me to request me to appoint him my assistant in the Department of the Diseases of Women in the Demilt Dispensary. To my inquiry whether he intended to make this department of practice a specialty, he replied, 'I do not know; I have already devoted a year or more to each of the other departments in the Dispensary; and after I have acquired a knowledge of this also, I can decide to which to devote my special attention.' I complied with his request, and he remained my assistant until my resignation, and then became my successor in that institution, which position he held up to his decease. During my absences from the city for the past seven years, I have left my patients with uterine affections in the care of Dr. Brown, and in no instance has he failed to give entire satisfaction; and no unpleasant word has ever passed between us.

"Such a mind as that of our deceased fellow fears not to express its convictions, nor hesitates to defend them. But if Dr. Brown seemed sometimes, to those who did not know him, to manifest a controversial spirit, he spoke not to achieve a victory, nor to have the last word; but, never forgetting that there are two sides to a question, he could not form an opinion, and therefore could not relinquish one when formed, without balancing all the facts on both sides; and, though tenacious of his convictions, he was always fair in argument, and at once frankly abandoned any position which he could not fairly defend. For mere authority he had very little respect, and he challenged every magisterial assertion as every independent thinker should, and decided for himself. Thus he became an independent and accurate observer, and an excellent diagnostician. Dr. Thomas has illustrated this point; and I have for the past few years always hesitated to question any diagnostic conclusion of his, without a very careful appreciation of his reasons.

"Such characteristics could not fail to make Dr. Brown a manly, concise, and forcible speaker, while his classical acquirements gave him a graceful and perspicuous style as a writer. His paper read before this Academy less than a year since, on Pelvic Peritonitis and Peri-uterine Cellulitis,* has been extensively quoted both at home and abroad; and he was announced to have read a paper here this very evening, which, from what I knew of its plan and scope, would have added still more, I am sure, to his rising reputation as a writer.

"As a practitioner, Dr. Brown was indefatigable, and to his patients kind and faithful to the last degree. His frank and cheerful manner also greatly attached them to him. His success was also very marked, but only within a short year or two had he acquired the class and the amount of practice which adequately compensated him for his services. All the obstacles which obstruct a man who is obliged to rely upon himself alone had, however, been at last overcome and his sky was one of promise, without a cloud, when he was so suddenly removed.

"A prominent trait in Dr. Brown's moral character was his utter abhorrence of all duplicity, and all pretension and sham. He expected and wished to succeed himself, or fail, on his merits alone, and he never hesitated to denounce those who proposed to do so by trickery. But he was incapable of professional jealousy, and never said an unkind thing of those more fortunate than he in acquiring a reputation more rapidly through the aid of others. He could say severe things, as he considered them to be deserved, but never an ill-natured thing. He aimed concientiously to do his own duty to himself and to others, day by day, without inquiring into the acts of others; but his incentive to this was not mere policy, but a high moral sentiment.

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* Published in the American Journal of Medical Sciences, July, 1872, pp. 56–73.

"Dr. Brown has fallen at the most dangerous epoch of a city physician's life—about the sixth *septennium.* At forty he fairly begins to realize the natural results of his labor during the preceding twelve or fifteen years. But this only stimulates him to increased efforts to secure the full realization of his hopes of complete success, which still seems to him doubtful. He now feels that every thing depends on a year or two more of incessant labor, and, in acting upon this idea, the silver cord is broken and all is ended, and how frequently by a sudden death.

"But how erroneous is this conviction! Every physician at forty has already, in the main, decided his future reputation and success. If he has thus far been idle, he will never achieve a high position in his profession. If he has already labored strenuously and conscientiously for twelve or fifteen years, he has sown the seeds which will not fail to bear fruit to his honor, in due time, and he has already formed habits of labor which will continue to render him sufficiently a laborer. He should therefore now calmly trust to Providence for the results. Indeed, a brief respite from toil, as by a foreign trip, is much needed at this time of life by physicians of this class; after which they may return to their former laborious habits without danger. How many might thus be saved from death just at the time when the long-wished-for goal is fully in their view! Conant, and Elliott, and Brown will long be remembered and deeply lamented as examples, and I appeal to all my young brethren to bear such examples in mind. Many have acquired the habit of labor, while but few are willing to wait trustingly for its results, or ever think it necessary to acquire this habit also; and to all such I would most emphatically say, in the familiar words of one of our own best poets:

"'Learn to labor—*and to wait.*'"

CLINICAL NOTES ON THE ELECTRIC CAUTERY IN UTERINE SURGERY.

BY J. BYRNE, M.D.,
SURGEON-IN-CHIEF TO ST. MARY'S HOSPITAL FOR DISEASES OF WOMEN; CLINICAL PROFESSOR OF UTERINE SURGERY TO LONG ISLAND MEDICAL COLLEGE, ETC.

(*Continued from page* 541.)

In the preceding remarks it has been my aim to deal only with such questions as seemed to have a practical bearing on the subject of galvano-cautery; so that, for the sake of avoiding tedious details, many points of great interest and importance have been barely noticed, or passed over entirely.

With the same object in view, the clinical part of this paper will consist of a tabular record of operations, their subdivision into groups or classes, and such comments thereon as may serve to elucidate the more striking features of each, together with a few illustrative cases.

The whole number of cautery operations thus far occurring within my own observation has been seventy-three, as follows:

19 cases of epithelioma, including cauliflower cancer.
11 " encephaloid, or medullary cancer.
13 " catarrhal, inflammatory, and ulcerative affections of the cervical canal of uterus.
5 " amputation of cervix (non-malignant).
4 " fibrous and fibro-cellular polypi.
4 " sessile fibroid tumors.
2 " deep ulceration of os and cervix.
1 " intra-uterine vegetation (non-malignant).
2 " vascular tumors of urethra.
4 " granular urethritis.
3 " hemorrhoids.
1 " perineo-vaginal fistula.
1 " lipoma of scalp.
1 " lipoma of cheek.
1 " lipoma of ear.

70

Of the thirty cases of malignant disease,

17 were of the uterus alone.
7 " " uterus and vagina.
3 " " perinæum and vagina.

1 was of the left labium.
1 " " clitoris.
1 " " breast.

Among the nineteen cases of epithelioma,
7 were indurated or ulcerated only, and
12 were of the vegetating or cauliflower character. Of the latter,
7 were of the cervix uteri alone.
3 were of the perinæum and vagina.
1 was restricted to the left labium.
1 was restricted to the clitoris.

The following table shows the date of operation, the parts involved, and the condition of patients UP TO DATE, in seven cases of epithelioma in its ulcerating stage of development.

TABLE I.

	Date of operation.	Parts removed.	Progress.
1	May 10, 1870.	Posterior lip.	Patient left hospital well, and, though lost sight of since, believed to be cured.
2	July 7, 1871.	Entire cervix.	No return of disease; health entirely restored.
3	July 26, 1871.	Anterior lip.	No return of disease; died some months after from other causes.
4	Jan. 25, 1872.	Entire cervix.	No return of disease; general health entirely restored.
5	Feb. 28, 1872.	Entire cervix	No return of disease.
6	June 5, 1872.	Conical piece from centre of cervix.	Disease reappeared.
7	Nov. 13, 1872.	Entire cervix.	Operation at this time believed to be radically curative.

There are two out of the above seven operations that demand especial notice—Nos. 6 and 7—the same patient being the subject of both, as also of a previous operation undertaken for the removal of a cauliflower outgrowth (see Table II. No. 3). At the time this lady came under my notice, my experience in galvano-cautery was comparatively limited, nor did I fully realize, though not without some misgivings on the subject, the great importance of removing tissues as far beyond those apparently implicated as can be safely done.

In every such instance, therefore, since met with, the removal of the outgrowth has been but the first part of each operation, except where, by traction being made on the tumor at a certain stage, a deeply cup-shaped stump could be insured. Indeed, from what I have since observed, I feel justified in believing that had this rule been observed in the above case, the result would have been entirely different.

As to the failure of a second operation in the case of this lady, my explanation is simply this: the anæsthetic used on the latter occasion was nitrous oxide gas, and owing to certain alarming symptoms manifesting themselves a few minutes after I had commenced to operate, I felt impelled, in my anxiety for the patient's safety, to stop much short of so complete and satisfactory an operation as I might otherwise have effected. However, as the patient's general health is yet good, the best results may reasonably be hoped for from the more thorough measures adopted within the last few weeks.

The following case (Table I. No. 2) bears so forcibly on the importance of effectually removing all the diseased structures at least, and at the same time so well illustrates my method of operating, that its introduction here may add to the interest of what has been said.

CASE I.

CARCINOMA OF UTERUS,

involving both intra and supra-vaginal portions of the cervix.

About the 1st of July, 1871, I was requested by Dr. George K. Smith to see Mrs. ——, aged 47, the mother of three children, the youngest of whom being 10 years old. Previous to three years ago menstruation had always been regular; but since then, and up to within the last fifteen months, symptoms such as usually usher in the climacteric period were observed. The catamenia now, and for over a year past, had lost all the character of periodicity, and metrorrhagic hemorrhages had reduced her to a perfectly helpless condition. Her nocturnal pains were almost intolerable; emaciation had taken place to a very remarkable degree, and her anxious, care-worn, cachectic expression might alone have sufficed to indicate the nature of her malady.

By a digital examination, the cervix uteri was found much enlarged and irregularly indurated. The cervical canal was open to the extent of admitting an inch of the index finger, while the surrounding tissues, as far as could be reached within the neck, were unyielding, extremely tender to touch, and bled freely on the slightest provocation. Depth of uterus three inches.

Owing to the absence of any circular line of depression at the utero-vaginal point of convergence, it was found impossible to apply the cautery loop in such a manner as to include more than a small portion only of the diseased structures.

This difficulty, though not encountered before, had, nevertheless, been fully considered as one of the many contingencies likely to arise, and therefore, being anticipated, was provided for.

The patient having been anaesthetized, no trouble was found in bringing the diseased part into view, and, by the aid of my speculum, ample space was afforded for any manipulation required.

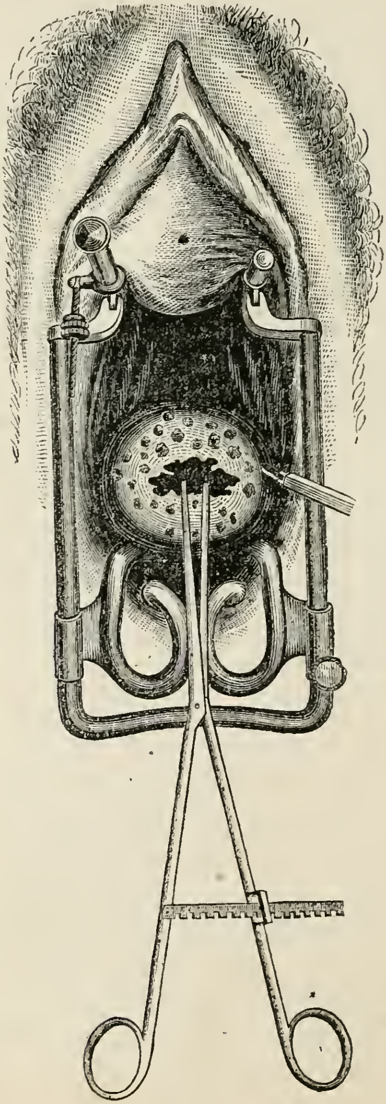

Fig. 10.

The gentlemen present at this operation were Drs. G. K. Smith, Skene, Dwyer, and Bedell. The cervix was seized by a vulsellum held in the left hand, while with the cautery-knife[*] the cervix was slowly severed and removed without loss of blood. The same instrument, only more curved by being bent, was now applied to the deeper tissues of the cervix, which, while drawn down by a tenaculum, were cautiously sliced off piece by piece, laterally as well as upward, to the utmost extent deemed safe.

When the parts were thus quite scooped out, a deep bell-shaped cavity was left, from the bottom of which to the fundus uteri measured little over half an inch. No hemorrhage occurred during the whole operation.[†]

The recovery of this patient was no less rapid than remarkable, and if we except a very trivial secondary hemorrhage, and some degree of irritation arising from accidental scorching of the vaginal wall, no single inflammatory, febrile, or other complication turned up to mar her progress. She has become strong and robust, and up to a very late period has even menstruated regularly, the flow being of course but very slight, yet unaccompanied with pain or distress of any kind. She is under constant observation, and calls at stated intervals, according to my request, for the purpose of being carefully examined. There is but little of a uterus to be felt, and the vaginal canal ends in a kind of cul-de-sac, at the bottom of which a still narrower passage may be detected, in depth about three quarters of an inch.

The above report of this case was written in the early part of last June, and she is still in the enjoyment of perfect health, having safely passed the climacteric period. That the successful issue in the foregoing case is due to the thorough manner in which the diseased tissues were cored out, I think there can be no doubt. It is also suggestive of the probable causes of failures and disappointments so often met with by some of our best gynæcologists, as referred to in the first part of this paper.

The following case clearly exemplifies the folly of trusting to half-way measures, and also where indurated and ulcerating conditions, however apparently limited in extent, resist judicious and active topical measures, how necessary it is to remove the whole cervix up to, and, if needed to insure success, to scoop out even beyond, the os internum.

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[*] The knife should be got into position before heating.

[†] A microscopical examination showed cancer-cells and free nuclei in abundance.

CASE II.

CARCINOMA OF CERVIX.

Mrs. H——, aged 30; has had one child and two miscarriages; applied for advice to the out-door department of St. Mary's Hospital in June, 1871. Menstruation had been regular up to six months before this date, but since then she has suffered from menorrhagia, sometimes excessive, but always prolonged, with shooting pains in the sacral and inguinal regions, and throbbing sensations in the vagina. She appeared much debilitated, and a physical examination of chest showed tubercular deposits in both lungs.

On making a digital examination per vaginam, the cervix uteri was found much tumefied, tender on pressure, and irregularly indurated.

The cervical canal in its inferior half, though open, admitted the sound with difficulty, and its most careful introduction was followed by much bleeding. Depth of uterus 3 inches. By the topical application of strong solution of iodine, and the use of quinine, iron, and cod-liver oil, the size of the cervix and its hardness seemed to lessen, while her general condition improved in a proportionate degree for a time, so that treatment was abandoned. October 4th she applied again on account of a return of her original symptoms, and on a careful examination her condition was found to be very similar to that first observed, and the uterine cervix much more enlarged and indurated. It was now decided to try the effect of actual cautery to the cervical canal as far up as the os internum, and also around the os tincæ, hoping by such active means to create healthy action and perhaps relieve congestion by producing a drain. At the end of a month the local condition seemed much better, and for two menstrual periods following this last treatment she had no menorrhagia, and her general health appeared to improve.

This improvement, however, was but temporary, for she once more, on the 25th of January, reported herself as feeling much worse than ever, and an examination fully confirmed the truth of her suspicions. She stated that she had been flowing for two weeks continuously, as was very evident from her anæmic look, and on examination the diseased parts presented a much more tumefied and inflamed appearance than on any previous occasion.

It was now decided to remove the whole cervix by galvano-cautery. The condition of her lungs rendering the administration of an anæsthetic of doubtful propriety, and being also desirous to ascertain the amount and extent of pain attending such operations, she was induced to forego etherization. The operation may be described as follows: The uterus having been brought into view and steadied by means of my speculum, the cervix was seized with a vulsellum, and the cautery-knife, before being heated, applied posteriorly, the blade directed transversely, and its edge looking upward and forward. The battery being now immersed, the knife was carried completely around the circumference of the cervix close to its vaginal insertion. In this manner a deep and somewhat oblique groove was made, which served as a bed for the loop. The latter was now made to embrace the cervix still held in the grasp of the vulsellum, the battery again immersed, and some traction being made during the passage of the heated wire through the tissues, the operation was completed. When the cervix was removed, what remained of the uterus was deeply concave, and its cavity measured less than 1½ inch. There was no hemorrhage during or subsequent to the operation, and, what is of some consequence to know, she declared that the pain experienced during this operation was no greater than she suffered repeatedly before, when any active topical application was made.

May 16th. Menstruation has appeared twice since the operation, lasting each time four days, and without the slighest inconvenience or tendency to hemorrhage. She has gained flesh, is free from pain, and expresses herself entirely well. By a careful vaginal examination, no trace whatever of disease can be recognized either by sight or touch.

A microscopical examination of the part extirpated gave abundant evidence of carcinomatous disease.

As to the eleven cases of epithelioma characterized by exuberant outgrowths from a comparatively narrow base, the same tabular arrangement observed in the first class may be conveniently adopted.

The first case in this table possesses so many features of great interest, that any remarks beyond those embodied in the following history seem uncalled for.

CASE III.

EPITHELIOMA OF CERVIX UTERI.

Mrs. A——, æt. 48, multipara, has always enjoyed the best of health up to within a few weeks of my being called to see her, which was in July, 1869. She complained of great backache and bearing-down sensations, and noticed some discharge of mucus occasionally mixed with blood. Menstruation regular and normal in character, and has always been so. By digital examination the cervix was found much tumefied, more particularly the posterior lip, and painful to touch. On inspection by speculum, there was found a slightly elevated and velvety-looking surface stripped of epithelium and extending over at least one-half of the posterior lip. Anterior half of cervix, though somewhat swollen, yet soft to the touch and paler. The local treatment consisted in warm vaginal douching and the application of iodo-glycerine to the diseased parts once and sometimes twice a week. A marked improvement was noticeable after a few weeks of this treatment, and hopes were entertained that it might be permanent. November 9th, I was requested to see her again, when she stated that her old pains and other disagreeable symptoms had lately returned, but in a much more severe degree. Besides, there was this peculiarity, she said, about her sufferings, that she was seized about 4 or 5 o'clock every morning with severe lumbar and hypogastric pain, which lasted up to 9 or 10, but after this latter hour she felt relieved and continued comfortable until the same hour of the succeeding morning. A speculum examination now revealed a similar condition of the uterus to that first observed, when the same active topical measures were once more resorted to, but on this occasion with no improvement whatever.

TABLE II.

VEGETATING EPITHELIOMA.

	Date of operation.	Parts removed.	Progress to date.
1	Jan. 4, 1870.	Posterior lip.	No return of disease.
2	Dec. 4, 1870.	Left labium vagina.	No return; died from other causes sixteen months after operation.
3	June 18, 1871.	A part of both lips, which the tumor seemed to involve equally.	Reappeared in ulcerating form.
4	Sept. 13, 1871.		Died from causes not attributable to operation.
5	Nov., 1871.	Labium and part of perinæum.	Little gained by operation.
6	Feb. 11, 1872.	Tumor and cervix.	Had recovered perfectly and no return of disease at last report.
7	April 26, 1872.	Entire cervix.	No return of disease.
8	March 6, 1872.	Clitoris.	Believed to be cured.
9	May 4, 1872.	Entire cervix.	Well at last report.
10	July 20, 1872.	Entire cervix, and cauterized suspicious, warty-looking excrescences on vagina.	Doing well at last report.
11	Nov. 20, 1872.	Left labium and nates.	Greatly relieved.
12	Dec. 4, 1872.	Left labium and nates.	Greatly relieved.

The disease, for some time suspected, was diagnosed as epithelioma, and for the following among other reasons: 1st. The hereditary predisposition existed in a marked degree, and of which important fact I had had some personal knowledge; and 2d. The disease had resisted treatment, constitutional as well as local, well calculated to improve if not to cure a less serious ailment.*

About this time (December, 1869), Dr. Noeggerath exhibited at a meeting of the New-York Obstetrical Society a specimen of epithelioma removed from the cervix uteri by galvano-cautery, and its resemblance to what I had observed in my own patient induced me to request a consultation with Dr. N.

This having been readily assented to, and my diagnosis concurred in, it was decided to remove the diseased part by galvano-cautery, and the operation was performed on the 4th of January, 1870.

This was accomplished by the platina loop, the shape of the tumor rendering this a work of no great difficulty, and the part excised embraced nearly the entire vaginal portion of the posterior lip.

A little glycerine and tannin was brushed over the cauterized surface, the bowels kept quiet by opiate suppositories for a few days, and in less than two weeks the patient, with no other local treatment save tepid vaginal baths, was up and about. On the 1st of February, 27 days after the operation, the healing process was found to be so nearly complete that nothing further seemed needed, and, being entirely relieved of all pain, she rapidly recovered strength.

A careful speculum examination, however, was made every few weeks for some time, with a view of detecting any reappearance of the disease; but, nothing of the sort being noticed, these precautionary measures were abandoned after a few months. About a year ago this lady requested me to see her again, and stated that she had lately suffered so much from pelvic pains, referable particularly to the bladder and pelvic region, that she feared there might be some return of her former difficulty.

A careful examination failed to detect any thing more than a slight abrasion on the posterior aspect of the os tincæ, and a certain degree of firmness of the part from which the disease had been removed. This, however, was attributed to mere congestion of the part, and active topical applications quickly restored the parts to their natural condition.

Other measures calculated to relieve slight cystitis, which undoubtedly caused much of the pain and distress complained of, were prescribed, and the patient rapidly recovered. Six months ago (May 20th, 1872), I was requested to see her, when she informed me that she began to feel a little anxious on account of some slight mucous discharge and more or less tenesmus. It was deemed best to examine into the state of the uterus: this was found to be in a condition precisely similar to that of twelve months previously, and after two applications of iodo-glycerine to cervical canal, the improvement at last examination was so great that no further treatment was called for.

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* This latter fact is, in my opinion, of the utmost importance in all such cases, and presents strong presumptive evidence of malignancy.

Menstruation has not yet appeared regularly, and this last attack was doubtless due to a scanty flow at a previous period. It should have been mentioned, that the outgrowth when removed was submitted to a careful microscopical examination, and all the evidences of true epithelioma were present. It is now nearly three years since the operation.*

CASE IV.

The second case in the preceding class was one of extensive epithelioma, involving the whole of the left labium vaginæ, in an old lady aged 70. The entire part was removed by cautery, and in less than one month from the date of operation the surface healed and seemed to be covered over by perfectly smooth and healthy material. She continued to enjoy good health, for one of her years, during the succeeding twelve months, when symptoms indicating cancerous disease of mesentery and other internal parts rapidly became developed, and from which she succumbed 16 months after the operation. It is worthy of remark, however, that the surface from which the diseased mass had been excised remained perfectly healthy up to the time of her death, nor were any of the pelvic organs concerned in the final work of destruction.

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* A few weeks ago (Nov. 26th) the uterus was carefully examined, but no evidence of a return of the disease could be detected.

(To be continued.)

REVIEWS.

[Press of material has crowded out the reviews of the numerous works which have accumulated on our hands. In the May number, however, we will devote sufficient attention to them to make amends for past omissions.—Ed.]

Lehrbuch der Frauenkrankheiten. Von Dr. T. Gaillard Thomas, Professor der Geburtshülfe, Gynäkologie und Pädiatrik in New-York, etc. Nach der zweiten Auflage des Originales übersetzt von Dr. Max Jaquet, praktischem Arzt und früherem Secundärarzt der Königl. geburtshülflichen und gynäkologischen Universitätsklinik zu Berlin. Mit 225 Holzschnitten. Berlin: 1873. Verlag von August Hirschwald.

It is not necessary for us to review the above work, suffice us to say that it is one of the highest compliments for an American author to have his work so highly appreciated as to call for a German translation. The honor thus paid to Professor T. G. Thomas in the translation of his work on Diseases of Women must be exceedingly gratifying to him and his professional friends and readers. This German edition is equal in all respects to the original American.

BOOKS RECEIVED.

The Science and Art of Surgery. Being a Treatise on Surgical Injuries, Diseases, and Operations. By John Eric Erichsen, Senior Surgeon University College Hospital, and Holme Professor of Clinical Surgery in University College, London. A New Edition, enlarged and carefully revised by the Author. Illustrated by upwards of 700 engravings on wood. 2 vols. 8vo. Philadelphia: Henry C. Lea. Pp. 918.

SURGICAL DISEASES OF INFANTS AND CHILDREN. By M. P. GUERSANT, Honorary Surgeon of the Hôpital des Enfants Malades, Paris, etc. Translated from the French by RICHARD J. DUNGLISON, M.D. 8vo. Philadelphia: Henry C. Lea. 1873. Pp. 354.

GENERAL AND DIFFERENTIAL DIAGNOSIS OF OVARIAN TUMORS, with special reference to the Operation of Ovariotomy and occasional Pathological and Therapeutical Considerations. By WASHINGTON L. ATLEE, M.D. 8vo. Philadelphia: J. B. Lippincott & Co. 1873. Pp. 482.

A TREATISE ON THE THEORY AND PRACTICE OF OBSTETRICS. By WILLIAM H. BYFORD, A.M., M.D., Professor of Obstetrics and Diseases of Women and Children in the Chicago Medical College, etc., etc. Second edition, thoroughly revised. 8vo. New-York: William Wood & Co. Pp. 469.

FISTULA, HÆMORRHOIDS, PAINFUL ULCER, STRICTURE, PROLAPSUS, AND OTHER DISEASES OF THE RECTUM; THEIR DIAGNOSIS AND TREATMENT. By WILLIAM ALLINGHAM, Fellow of the Royal College of Surgeons of England, etc., etc. Second edition, revised and enlarged. 12mo. Philadelphia: Lindsay & Blakiston. 1873. Pp. 265.

THE PRACTICE OF SURGERY. By THOMAS BRYANT, F.R.C.S., Surgeon to Guy's Hospital. With 507 Illustrations. 8vo. Philadelphia: Henry C. Lea. 1873. Pp. 983.

THE PHARMACOPŒIA OF THE UNITED STATES OF AMERICA. Fifth Decennial Revision. By authority of the National Convention for Revising the Pharmacopœia held at Washington A.D. 1870. 12mo. Philadelphia: J. B. Lippincott & Co. 1873. Pp. 383

THE PATHOLOGY, DIAGNOSIS, AND TREATMENT OF DISEASES OF WOMEN, INCLUDING THE DIAGNOSIS OF PREGNANCY. By GRAILY HEWITT, M.D., Lond. F.R.C.P., Professor of Midwifery and Diseases of Women, University College, and Obstetric Physician to the Hospital, etc., etc. Second American from the third London edition, revised and enlarged with 132 Illustrations. Philadelphia: Lindsay & Blakiston. 1872. Octavo. Pp. 751.

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* *Authors' names in italics designate that they are European, otherwise American.*

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